In Two Sections—Section Two
July 5, 1928

Engineering News-Record

A Consolidation of Engineering News and Engineering Record

A JOURNAL OF CIVIL ENGINEERING AND CONTRACTING

ISSUED WEEKLY

VOLUME 100

January 1 to June 30, 1928

McGRAW-HILL PUBLISHING COMPANY, INC.
TENTH AVENUE AT 36TH STREET
NEW YORK

INDEX TO ENGINEERING NEWS-RECORD

VOLUME 100—January 1 to June 30, 1928

		Pages
Jan.	5	1 to 48
Jan.	12	49 to 96
Jan.	19	97 to 136
Jan.	26	137 to 176
Feb.	2	177 to 220
Feb.	9	221 to 260
Feb.	16	261 to 300
Feb.	23	301 to 340
March	1	341 to 384
March	8	385 to 424
March	15	425 to 462
March	22	463 to 498
March	29	499 to 534
April	5	535 to 574
April	12	575 to 610
April	19	611 to 646
April	26	647 to 682
May	3	683 to 722
May	10	723 to 762
May	17	763 to 798
May	24	799 to 834
May	31	835 to 878
June	7	879 to 918
June	14	919 to 954
June	21	955 to 990
June	28	991 to 1026

A

ACCIDENTS AND ACCIDENT PREVENTION
- Accidental drowning e463
- Air pressure burst out the deck of a pneumatic caisson for a tunnel shaft, five lives lost, London *698
- Awards to railroads with high safety record n794
- Contractor, John W. Cowper, Inc., Buffalo, N. Y., honored for perfect record n294
- Ill winds: catastrophes necessary to bring improvements? e99
- National Safety Council makes awards to railroads with highest safety records..n794
- Norman, steamer, sinking in Mississippi: Recovery for victims' heirs insured in bill before Congress n372
- The human factor in engineering e725
- (See also Bridge accidents; Building accidents; Construction, safety measures; Explosions; Highway accidents, etc.)

Acetylene flare light, portable, for construction work (Oxweld Acetylene Co.) ..n*644

Acoustics:
- Photo-echo study for acoustics of buildings, K. Slidell *899

Advertising:
- McGraw, J. H., address, acknowledging Bok medal for service to advertising .. e303 ..... n*334

Aerial photography. (See Maps and Mapping.)

AERONAUTICS
- Airports:
  - Building an airport at Portland, Ore., J. H. Polhemus *928
  - Purchase of sites urged in report of Regional Plan of New York and Its Environs n709
- Progress in aerial navigation in 1927 .. e54
- Progress in air transportation e880
- Swift couriers; air mail progress in the U. S. e611
- Westward flight across the Atlantic e611

Africa:
- Sierra Leone Government Railway, new articulated locomotives 18
- To build longest bridge on the continent across the River Benue at Makurdi 143
- Zambesi River, Northern Rhodesia, surveys by seaplane 269

Agricultural engineering:
- Engineering in agriculture; history and forecast. R. Olney. *58; see also ...l 251

(See also American Society of Agricultural Engineers.)

Air blower. (See Blowers.)

Air compressors. (See Compressed air.)

Air-right roads planned by Chicago n827

Akron, O.:
- Core tests of concrete pavement. E. A. Kemmler *660
- Eliminating unaccounted-for flow and leakage in water mains. L. H. Newhall j*944
- Pavement repairs planned to reduce street closing time. E. A. Kemmler..*16

Albany, N. Y.:
- Water supply. (See Water Supply.)
- Water-works. (See Water-works.)

Albuquerque, N. M.:
- Iron removal plant. H. N. Veatch, Jr. *845

Alexandria, Va.:
- George Washington Masonic National Memorial, built to last for thousands of years. C. Carswell *543

American Association of Engineers: Meeting (annual), El Paso, June 4-6 ... 941

American Automobile Association:
- Motor Congress, Washington, D. C., cooperation sought to relieve traffic congestion 587

AMERICAN CONCRETE INSTITUTE
- Convention (annual), Philadelphia, Feb. 28—March 1 ..... e387, 409
- Papers stress construction problems ..a481
- Program announced n92
- New president, E. D. Boyer n*418

AMERICAN ENGINEERING COUNCIL
- Administrative board, meeting in Washington discusses bills now before Congress n872
- Meeting (annual), Washington, Jan. 1928 ..... n130
- Opposes Boulder dam n677

American Engineering Standards Committee:
- Preferred numbers, table informally approved 448
- Serrill, W. J., elected chairman n758

American Institute of Architects:
- New York chapter to study health and safety in the building industry n492

American Institute of Consulting Engineers:
- Meeting (annual), New York, Jan. 16-17 n130

American Institute of Steel Construction:
- Organizes field force n948

A.R.E.A.
- Committee on rail reports demand for heavier rails 477
- Convention procedure e427
- Faucette, W. D., elected president n*457
- Meeting (annual), Chicago, March 6-8 n456
- Motor Transport Division:
  - Meeting to effect a permanent organization n93

AMERICAN ROAD BUILDERS' ASSOCIATION
- City Officials' Division formed...n603, n950
- Conner, C. N., appointed chief engineer n*604
- Convention (annual), Cleveland, May 11 ..... a117, n793
- County Officials' Division:
  - Meeting (annual), first, to be held in Washington, May 12 ..... n678

Road show. (See Road shows.)

American Society for Steel Treating:
- Silicon steel, fabricating problems; paper by H. T. Morris 231

AMERICAN SOCIETY FOR TESTING MATERIALS
- Committees to meet in Washington, March 20-23 ..... n333
- Group meeting held n527

American Society of Agricultural Engineers:
- Consulting Agricultural Engineers, newly organized division n373

AMERICAN SOCIETY OF CIVIL ENGINEERS
- Acts upon two interpretations of code of practice 195
- Awards prizes and medals at 75th annual meeting, New York City n*128
- Board of Direction, annual meeting, Jan. 16 ..... n126
- Col. Lincoln Bush elected president at annual meeting n*127
- Committee to collect data on St. Francis dam failure n675
- Meeting (annual), 75th, New York City, in January e98, e137, 156
- Meeting to be held in Washington, April 25-27 ..... n562
- Papers chiefly concerned with engineering works in Washington ... 705
- Milestone, 75th anniversary e98
- New York Section protests limitation of state architect's responsibility n253
- Planning of Mississippi flood-control work, society's proposal to place it in hands of experts e684
- Resolution on flood-control legislation presented to President n675
- Structural Division, report on buildings in the Florida hurricane e342, *351
- Student chapters e683
- Technical procedure committee appointed n252

American Society of Mechanical Engineers:
- Hydraulic division, survey committee to begin survey of hydraulic research ..n256

AMERICAN WATER WORKS ASSOCIATION
- Convention (annual), San Francisco, June 11-15:
  - Abstracts of papers, reports and discussions e835, n873, *962, 1011
  - Brush, William, elected president ...n984
  - Exhibit of equipment at convention n714, n988
  - Plans announced n603
- Illinois Section, meeting, March 29-30, discusses well water and softening ..n562
- Indiana Section, annual meeting, March 15-16 ..... n529
- New York Section:
  - Discusses Manual n92
  - Two-day spring meeting at Utica ...n677

AMERICAN WELDING SOCIETY
- Committee on structural steel welding plans series of tests n873
- Meeting (annual), New York, April 25-27:
  - Society plans series of tests on welded joints n709
- Structural welding research committee, tabulation of test data on unit strength of welded joints *237

American Wood Preservers Association:
- Meeting, Montreal, Jan. 24, discusses railway use of treated timber n255

Anchors:
- Guy wire anchors in two new types (W. N. Matthews Corp.) n*607
- Hook anchors, carrying capacity, tests of, T. D. Mylrea a484

Apprentices. (See Labor).

AQUEDUCTS
- Hetch Hetchy project, San Francisco water supply:
  - Construction progress *611
- Los Angeles-Colorado River project:
  - Progress in 1927 81
  - Surveys, H. A. Van Norman and E. A. Bayley *859
- Los Angeles-Owens Valley:
  - Dynamiter confesses in court n492
- Wanaque reservoir, N. J.:
  - Aeration of water, report of G. W. Fuller n678
  - Aqueduct and aerator fate uncertain n711
  - Latest action on 722

Arch bridges. (See Bridges.)

Arch dams. (See Dams.)

Arches:
- Massive arches and beams in concrete railway station, Limoges, France *417
- Roof structure made up of series of bowstring arches, Glasgow hall, W. L. Scott *926

ARCHITECTS
- New York State architect to be made subordinate of Superintendent of public works e299
- Proposed subordination to lay commissioners opposed n253
- Sullivan W. Jones resigns, e261, 294; correction n458

ASPHALT
- Aggregate sprayed under pressure by Finley rotary pressure mixer (American Fin-Mix Co. n*258
- Asphalt emulsion ("Curerete") for concrete curing (Barber Asphalt Co.)..n1025
- Curing concrete paving with asphalt skin coat j31
- Hot asphalt used in grouting leakage in Wilson dam, H. Passburg *627
- Pavements. (See Pavements and paving.)
- Rotary pressure mixer (American Fin-Mix Co.) n*258
- Sheet asphalt laid on concrete floors of factory building, H. Skidmore and J. Donchue *8

Asphalt Paving Conference:
- Annual meeting, 7th, to be held in New Orleans n949

Assessments. (See Municipal improvements.)

ASSOCIATED GENERAL CONTRACTORS
- Board meeting to be held in May n678
- Convention (annual), West Baden, Jan. 23-27 ..... e177, n207
- Bechtel, W. A., elected president ...n*208
- Contracting business hazards and reforms reviewed n196
- Levee division organized e881
- Marshall, R. C., Jr., to retire as head ..n529
- Meeting, Jan. 1928, exhibit reservations coming in n37
- Protest against legislation placing restrictions on contractors engaged in public work n458
- Registration of bidders proposed..... n1022
- Spring meeting, Washington, D. C., May 7-10; considers holding convention on steamship n790
- Strong credit policy approved..... n1024

Association of Road Congresses. (See Permanent International Association of Road Congresses.)

Athletic field house, University of Minnesota, steel arch trusses form main framework G. H. Herrold *578

Australia:
- Federal road plan now complete..... 116
- Registration of engineers..... 1001

Automobiles. (See Motor Vehicles.)

Awards:
- A.S.C.E., prize and medals awarded at annual meeting n*128
- Cowper, J. W., contractor, award for perfect accident-prevention record....n294
- *Electric Railway Journal* wins Associated Business Papers, Inc. award...n335
- Freeman, W. W., receives McGraw Award for co-operation e97, n127
- Illinois Society of Engineers offers prizes n170
- McGraw, J. H., address acknowledging Bok medal for advertising....e393, n*334
- Pupin, Michael, Dr., received Washington Award for 1928..... n253
- To railroad with high safety records, by Nat'l Safety Council..... n794
- Welding prizes awarded n906

B

Balconies:
- Construction of heavy concrete balcony Schine's Theater, Lima, O. R. C. Reese *822

Baltimore, Md.:
- Garbage disposal. (See Garbage and refuse disposal.)
- Mechanical-electrical bureau enlarged ..n640
- More politics and engineering n420
- Sewage-works. (See Sewage-works.)
- Supervising engineer appointed n905

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

BEAMS
Arc-welding to reinforce, alteration of steel-frame building. G. Gill *350
Small beams give valid results in transverse tests of concrete in the field. C. A. Wiepking a483
Bitumen:
Bituminous coating applied by new air-operated gun. n*258
(See also Asphalt.)

BLASTING
Dry cell unit provides advantages of electric firing (National Carbon Co.) ...n*989
Loading blast holes with black powder with aid of compressed air, highway work in California j*415
Safe wrecking of brick and concrete building by blasting *943
Bloomington and Normal Sanitary District: Sewage-works dedicated n948
Blowers:
Air blower removes sticks and debris from concrete aggregates. B. E. Torpen j*599
Blueprints. (See Drawing and Drawings.)
Boards:
Composition board made from processed straw (Stewart Inso Board Co.) ...n*497
Boiler feed water:
A.W.W.A. convention report a936
Large water softening plant for (W. B. Scaife & Sons) n761
Bolt, Nut and Rivet Manufacturers' Association:
Plans distribution conference n760
Bolts:
Flexible (American Cable Co.) n877
Smaller dimensions for machine nuts advised 983
BONDS
Albany, N. Y., bond issue of $3,000,000 to finance first part of water supply project, authorized n527
Chicago, Ill., defeat of a long list of proposed bond issues e611, n642
Dallas, Texas, votes bonds for city improvements n32
Detroit to vote on $30,000,000 issue for sewers n374
East Greenwich, R. I., town voted against bonds for sewage-works n947
Everglades Drainage District bonds held legal. n562
Highway. (See Highway economics.)
Kansas City, Mo., to vote on $18,500,000 bond issue for public improvements n641
Bond vote fails n828
Montreal, referendum on $30,000,000 of improvements defeated n295
Municipal bonding by fiat e343
New Orleans, bonds totaling $9,000,000, plus yearly revenue authorized for improvements e685, n712
Pontiac, Mich., to vote on bond issue for municipal improvements n711
Salt Lake City, city engineer advises large bond issue n711
San Francisco authorizes bonds to buy out the Spring Valley Water Company and finish the Hetch Hetchy aqueduct n709
San Francisco to vote on two water bond issues n604
BOOK REVIEWS
Aerial photographs (D. M. Reeves) 453
American universities and colleges (D. A. Robertson, editor) 454
Architectural design in concrete (T. P. Bennett) 287
Architecture explained (H. Robertson) 454
Beton arme (V. Forestier) 289
Betonstrassen (A. Kleinlogel), reviewed by H. M. Lewis 635
The city manager (L. D. White) 123
Design and construction of dams (E. Wegmann), with a mathematical discussion of multiple arch dams (F. A. Noetzli) 123
Disposal of sewage (T. H. P. Veal) 787
Economics of land reclamation in the U. S. (R. P. Teele), reviewed by M. R. Lewis 452
Drang und Zwang (A. Föppl and L. Föppl), reviewed by G. Paaswell 980
Elements of economic geology (J. W. Gregory) 981
Das Essener Heft, reviewed by A. M. Buswell 980
Das Fassungsvermögen von Rohrbrunnen (W. Sichardt), reviewed by A. Wolman, 786; see also 1 981
Federal aid (A. F. Macdonald) 635
Federal health administration in the U. S. (R. D. Leigh) 124
Heating and ventilation (C. W. Brabbee), reviewed by D. D. Kimball 787
Herbert Hoover, a reminiscent biography (W. Irwin) 979
Highway engineering (J. H. Bateman) .. 786
Highway materials (E. E. Bauer), reviewed by H. S. Mattimore 452
Marine borers and their relation to marine construction (C. L. Hill and C. A. Kofoid, editors-in-chief) 290
Modern aircraft (V. W. Pagé) 122
Der neuzeitliche Strassenbau (E. Neumann), reviewed by H. M. Lewis ... 453
Plantations, parcs et jardins publics (G. Lefebvre) 454
Plumbing (H. E. Babbitt) 289
Principles of highway engineering (C. C. Wiley) 786
Principles of irrigation, roads and buildings (W. L. Strange) 289
Principles of sanitation (C. H. Kibbey) 634
Regulation of the Great Lakes (J. R. Freeman), reviewed by I. E. Houk .. 121
Reinforced-concrete flat slab roofs (J. Podolsky), reviewed by L. S. Moissieff 289
Road to plenty (W. T. Foster and W. Catchings), reviewed by E. J. Mehren 634
Steam turbines (E. F. Church, Jr.), reviewed by A. G. Christie 636
Stresses, graphical statics and masonry (G. F. Swain), reviewed by W. K. Hatt and E. L. Ericksen 288
Verlauf und Ergebnis der Internationalen Wirtschaftskonferenz (E. Respondek) 788
Wasserabfluss durch Stollen (E. Schleiermacher), reviewed by L. G. Straub .. 979
Water! (A. P. Terhune) 979
Water purification studies (H. W. Streeter), reviewed by N. J. Howard.. 287
Water supply of towns (W. K. Burton), reviewed by J. E. Dumbleton 290
Boston, Mass.:
Set-back buildings now permitted n563
Boston Metropolitan Water District:
Additional supply from Swift and Ware rivers, construction progress 85, n491
Boulder Canyon dam project. (See Colorado River.)
BRICKS AND BRICKWORK
Brick makers urge co-operation in burned clay products field n376
Damp-proof tile-and-brick walls, e262; P. H. Bevier *285
Paving:
Recommended sizes remain the same for 1928 .....n567
(See also Pavements and paving.)
Research in Bureau of Standards 629
Weathering of brick walls. 487
BRIDGE ABUTMENTS AND PIERS
Piers:
Difficult cofferdam foundations for Fort Lee bridge e425, n457
Pneumatic caissons sealed at record depths, using quick-hardening cement, Kennebec River bridge. C. K. Allen *484
Steel shells of piers in service 39 years still sound, Los Angeles viaduct. *590
BRIDGE ACCIDENTS AND FAILURES
Colorado River, at Blythe, Calif., two spans carried out by flood n985
Du Pont bridge across St. Andrews Bay, near Panama City, Fla.:
Falsework fails n168
Schoharie River, near Albany, N. Y., truck causes collapse of 150-ft. through-truss span n491
Steamer damages drawbridge, Chicago, Ill. n676
BRIDGE DEMOLITION
Bombing concrete bridge by Air Service yields valuable military data n33
Passing of old Mississippi bridge at Port Gibson *970
BRIDGE DESIGN
Arch:
Kill van Kull. (See Bridges, Kill van Kull.)
Steel arch, 600-ft., over Grand Canyon, Arizona *17
Concrete:
Kansas City, Mo., steel and concrete viaduct masked as arch structure. S. E. Berkenblit *620
Movable:
New vertical lift bridge of Lackawanna R.R. to reduce delays, e763; M. Hirschthal *779
Parabolic truss:
Early bridges gradually disappearing. R. Fleming *745
Some early facts. G. Lindenthal ..1 789
Railing:
Malleable iron railing withstands severe tests, Liberty bridge, Pittsburgh. F. W. Groh *618
Movable railings for reinforced-concrete bridges. A. R. Mellor j*752
Suspension:
Fort Lee, designing steel towers. e800; L. D. Moisseiff *819
Mount Hope Bay, R. I., wire-cable bridge with 12,200 ft. suspended span .....*585, correction 1016
Wooden bridge, 90-year-old, unusual in exactness of design and construction and in its preservation. N. J. Bell and J. K. Grannis *234
BRIDGE ERECTION
Bridge 502 ft. above stream bed, cantilever span built with cableway and travelers. R. M. Murray *282
Falsework:
Barges place falsework at high tide, Arlington Memorial bridge j*525
Graphic charts used to report progress, Illinois. C. M. Hathaway j*29
Methods for erecting ordinary truss spans; discussion, Western Society of Engineers 164
North St. bridge, Los Angeles, concrete with 2-in. slump delivered in chutes.. 483
Plant layout:
Casting piles and pouring girder and slab deck e500, *502
Long drop for concrete chuted to piers, Twin Falls Jerome, Idaho ..j*414
Progress during 1927 ..... e51
Steel arch bridge at Sydney, Australia, early stages of construction *538
Steel, double-deck structure, Kennebec River, pneumatic caissons sealed at record depths. C. K. Allen *484
Steels, high-strength for modern bridges. L. S. Moisseiff 155
BRIDGE RENEWALS AND REPAIRS
Rebuilding a toll bridge in service, Harrisburg, Pa. e955; C. E. Modjeski *971
Reconstruction of a damaged draw span, J. E. Kidd j*944
BRIDGE STRESSES
Check by strain-gage measurements on models in designing towers of Hudson River bridge, e800; L. D. Moisseiff ..*819
Ends bridge, present stress conditions .*1009
Ninety-year-old wooden bridge, stress analysis of. N. J. Bell and J. K. Grannis *234
Rivets in tension in an old railroad bridge. H. D. Hussey 1 206
Steel plates transfer stress in concrete bridge truss, Admiral Way, Seattle ..*440
BRIDGE TRAFFIC
Carquinez Strait bridge causes traffic increase 970
Hackensack River drawbridge to be replaced by new high-level crossing to reduce delays e763
BRIDGES
Africa, to build longest bridge, across the River Benue at Makurdi 143
Arch:
Arlington Memorial:
Construction progress 85
Erection started on superstructure n564
Falsework placed by barges, at high tide j*525
Superstructure contract let..... n90
Grand Canyon, bridging with a 600-ft. steel arch *17
Kill van Kull. (See Bridges, Kill van Kull.)
Steel arch, 1,650 ft., bridge at Sydney, Australia, early stages of construction *538
Arlington Memorial bridge, across Potomac River:
Barges place falsework at high tide j*525
Construction progress 85
Erection started on superstructure ...n564
Superstructure contract let..... n90
Arthur Kill:
Bridge between Elizabeth, N. J. and Howland Hook, S. I., named in honor of Gen. Goethals n492
Cantilever spans almost completed by end of 1927 85
Opened to traffic, June 20 .....n*985
Success in public-works construction e993
Bath, Me. (See Bridges, Kennebec River.)
Canadian parliament considers applications for charters n256
Cantilever:
Arthur Kill. (See Bridges, Arthur Kill.)
Montreal South Shore bridge, nearing completion 85
Snake River Canyon, Idaho, 502 ft. above stream bed. R. M. Murray..*282
Cape Fear River, Wilmington, N. C.:
Bids received n709
Carquinez Strait:
Causes traffic increase 970
Southern Pacific plans to build n907
Champlain, Lake:
Continuous truss construction for interstate toll bridge 931
Contracts let n794
Chicago, Ill.:
Big bridge work for 1928 .....n420
Diversey Ave. drawbridge damaged by steamer n676
Chicopee Falls bridge:
Learning by errors. e499
Concrete:
Admiral Way, Seattle, reinforced concrete bridge, steel plates transfer stress *440
Arlington Memorial bridge. (See Bridges, Arlington Memorial.)
Bombing by Air Service yields valuable military data n33
Lake Pontchartrain, La.:
Plant and methods employed in building trestle e500, *502
To be opened Feb. 18, 1928 .....n255
Recording concrete strength, Los Angeles, aids in getting better bridges n*755
Cooper River, Charleston, S. C.:
Work started during May n950
Detroit to Windsor:
Pier construction in progress 85
Du Pont bridge across St. Andrews Bay, Fla.:
Bridge pier cylinders fail and seven drown n168
Ends bridge, St. Louis:
Strength and safety indorsed by engineers *1009
Fort Lee bridge across Hudson River:
Bids opened for tower and anchor foundations n417
Construction progress 85
Contract awarded for tower foundation n678
Designing the towers, e800; L. D. Moisseiff *819
Goethals Bridge. (See Bridges, Arthur Kill.)
Grand Canyon, 600-ft. steel arch, Flagstaff, Arizona *17
Hackensack River, Lackawanna makes costly line change to reduce delays, e763; M. Hirschthal *779
Harrisburg, Pa., across Susquehanna River:
Rebuilding a toll bridge in service, e955; C. E. Modjeski *971
Hudson River. (See Bridges: Fort Lee bridge; Poughkeepsie bridge.)

Iron:
Schoharie River, near Albany, N. Y., truck causes collapse of span n491
Kansas City, Mo., Mill Creek viaduct, steel and concrete viaduct masked as arch structure. S. E. Berkenblit ....•620
Kennebec River bridge, Bath, Maine, caissons sealed at record depths. C. K. Allen ....•484
Kentucky, Camp Nelson, near Lexington, 90-year-old wooden bridge. N. J. Bell and J. K. Grannis ....•234
Kill van Kull, Port Richmond, S. I. to Bayonne, N. J.:
Arch type selected by Port Authority n295
Port Authority sells bonds n90
Steel arch bridge, construction to begin in 1928 85
Liberty bridge, Pittsburgh. (See Bridges, Pittsburgh.)
Los Angeles, First St. viaduct, steel shells of piers in service 39 years, still sound ....•590
Los Angeles, North St., concrete with 2-in. slump delivered in chutes 483
Montreal South Shore bridge:
Nearing completion 85
Mount Hope Bay, R. I.:
Design of wire-cable bridge, toll structure displaces ferry..•585; correction 1016
Pier foundation work now under way 85
Movable:
Direct-hoist lift bridge, Rock Island Lines. E. E. Howard ....l 165
San Francisco Bay, new vehicular bridge with a lift-span, work started n254
Vertical lift-bridge over Hackensack River to replace low-level drawbridge, building by D. L. & W. RR. e763; M. Hirschthal ....•779
New York City:
Fort Lee, over Hudson River. (See Bridges, Fort Lee.)
New York Port Authority. (See under Bridges: Arthur Kill bridges, Fort Lee bridge, Kill van Kull bridge.)
Niagara Falls:
Toll bridge proposed. n294
North Carolina, Pee Dee River bridge, bombing yields valuable military data n33
Outerbridge Crossing. (See Bridges, Arthur Kill.)
Panama City, Fla. (See Bridges, Du Pont.)
Parabolic truss, early bridges disappearing. R. Fleming ....•748
Some early facts. G. Lindenthal ....l 789
Philadelphia-Camden bridge:
Fabricating silicon steel for bridge. H. T. Morris 231
Pittsburgh, Liberty bridge over Monongahela River, malleable iron railing withstands severe tests. F. W. Groh ....•618
Pontchartrain, Lake, La.:
Concrete trestle, plant and methods employed ....e500, •502
To be opened Feb. 18, 1928 ....n255
Poughkeepsie bridge:
Active substructure work 85
Operations to right listed caisson n947
Quincy, Ill., abandons project for municipal bridge n293
Railing. (See Bridge design, railing.)
Railway:
Chicopee Falls, welded bridge, learning by errors e499
Eads bridge, St. Louis, strength and safety indorsed by engineers....•1009
Hackensack River bridge of D. L. & W. to be replaced by new high-level crossing, e763; M. Hirschthal....•779
St. Andrews Bay. (See Bridges, Du Pont.)
St. Lawrence River, bridge proposed between Brockville, Ont., and Morristown, N. C. n419
Steel plate-girder, erected by the Westinghouse Manufacturing Company, A. G. Bissell ....•322
Sydney, Australia, steel arch bridge to carry railway and street traffic across harbor ....•538
St. Lawrence River:
Railway bridge proposed, Brockville, Ont. to Morristown, N. Y. n419
San Francisco Bay bridges:
New vehicular toll bridge, across south arm of Bay, work started n254
Rincon Hill to South Mole, Navy and War Departments will probably prevent construction n529
Approval denied by War Dept. 82
San Mateo and Hayward, work begun n905
Schoharie River, Albany, N. Y., truck causes collapse of span n491
Seattle, Wash.:
Admiral Way, street carried across ravine on bridge built to half ultimate width ....•440
Snake River Canyon, Idaho, 500 ft. above stream bed. R. M. Murray..•282
Long drop for concrete chuted to bridge piers ....j•414
Steel plategirder, erected by the Westinghouse Manufacturing Company to carry rail traffic. A. G. Bissell ....•322
Steels, high-strength, for modern bridges. L. S. Moisseiff 155
Suspension:
Fort Lee, over Hudson River. (See Bridges, Fort Lee.)
Mount Hope Bay, R. I., wire-cable suspension bridge ....•585
Poughkeepsie, active substructure work 85
Sydney, Australia, 1,650-ft. steel arch bridge ....•538
Timber:
Kentucky, Camp Nelson, 90-year-old bridge, unusual preservation. N. J. Bell and J. K. Grannis ....•234
Toll:
Champlain, Lake, continuous construction 931
Detroit to Windsor, construction progress 85
Federal aid on roads leading to toll bridges, pro and con n336
Harrisburg, Pa., rebuilding a toll bridge in service, e955; C. E. Modjeski ....•971
Mount Hope Bay, R. I.:
Private toll franchise granted 85
Toll structure displaces highway ferry ....•585, correction 1016
New toll bridge bill in Congress n420
New York governor rejects three toll bridge bills n604
Niagara Falls, proposed bridge. n294
Pontchartrain, Lake:
Concrete trestle; plant and methods employed ....e500, •502
To be opened, Feb. 18, 1928 ....n255
San Francisco Bay:
New vehicular bridge across south arm of Bay, work started n254
Some thoughts on toll bridges; notable early structures and greater possibilities. G. Lindenthal .... •70
Brooklyn Polytechnic Institute:
Raises degree standards n34
Broom, leaf rake, used to roughen concrete highway surfaces. C. D. Buck ....j•30

BUCKETS
Drag-line:
Double-arch feature increases durability (G. H. Williams Co.) ....n•95
Fabricated by welding (Harnischfeger Corp.) ....n•608
Snow loading (Bay City Dredge Works) ....n•377
Bucks Creek project. (See Hydro-electric power, Feather River Project.)
Buffalo, N. Y.:
Pavement upkeep for 49 years, records kept since 1878....G. F. Fisk 15
Water supply. (See Water supply.)
Water-works. (See Water-works.)

BUILDING
Greater building heights e575
Progress during 1927 .... e51
Building blocks:
Plaster of Paris, from baking powder base (Rumford Chemical Works.) ..n•298

BUILDING ACCIDENTS AND FAILURES
Building accidents increasing n171
Chicago Club, failure of floors and interior framing n1020
Steel derrick plunges into crowded New York Street n758, e764

BUILDING CONSTRUCTION
China, Mukden hospital has spiral incline in place of elevators. F. V. Haugsted •736
Concrete:
Cold-storage plant, Cleveland, sliding forms build double walls at high-speed, in winter ....•405
Floors covered with sheet asphalt, factory building, H. Skidmore and J. Donohue .... •8
Heavy balcony construction, theater, Lima, O. R. C. Reese ....•822
Hearst Publications Bldg., New York City, waterfront foundation. e261; R. H. Chambers ....•280
Memorial tower, Alexandria, Va., granite and concrete building 330 ft. high, built to last through ages. C. Carswell ....•543
Repairing construction defects in a four-story reinforced-concrete garage building, Texas. G. Gill ....•743
Waterfront foundation complicated by buried log cribs, increased costs e261; R. H. Chambers....•280
(See also American Concrete Institute; also names of structures.)
Exterior curtain wall construction, weatherproof and dry. e262; P. H. Bevier ....•285
Falsework:
Steel tower for erection of War Memorial, Indianapolis ....j•522
Rapidity of erection:
Concrete building erected in ten weeks, steel structure in seven ....•900
Safety measures. (See Construction, safety measures.)
Steel frame construction for residence buildings, braced vertical members formed by shearing and stretching angles ....•691
Welding. (See Building design, welded buildings.)

BUILDING DEMOLITION
Safe wrecking of brick and concrete building by blasting ....j•943

BUILDING DESIGN
Athletic field house, 14 three-hinged steel arch trusses form main framework. G. H. Herrold ....•578
Concrete:
Glasgow hall utilizes concrete arches of 110-ft. span. W. L. Scott ....•976
Standards for building units to remain unchanged n607
Earthquake-resistant:
Column deflection method for designing lateral bracing. J. C. Van der Mey and F. H. Spitzer. •106; J. W. Pickworth ....l 370
Earthquake - resistant construction — H. D. Dewell:
I—Data of design ....e647, •650
II—Principles of design 699
Discussion. N. B. Green....l 942
Proper design and foundations make insurance not essential 580
Steel frame construction:
Engineering Building, Chicago, 23-story steel-frame structure ....•270
For residence buildings, uses members formed by shearing and stretching standard angles ....•691
Welded buildings:
General Electric Co., Philadelphia, large factory structure built by arc welding ....n494, e763, •766
Mississippi Valley Structural Co. shop, special automatic machine fabricates columns and girders ....•882
Wind-resistant:
Wind-braced high buildings in the Florida hurricane; report of Structural Division, A.S.C.E. ....e342, •351
Wind bracing of tall buildings to be studied, Ohio State University n641
Wind-pressure tests made on large model building, older formulas are too high. E. R. Dawley ....•508

BUILDING LAWS AND REGULATIONS
Boston, Mass., set-back buildings now permitted n563
California municipalities appoint technical society committees to draft building code n678
Montclair, N. J., code limiting apartment house heights upheld n372
Philadelphia, General Electric Co. factory, arc-welded, erected under building code ....•766
Welding and city building codes. M. E. Hibbs ....l 904
Washington, D. C., zoning commission opposes high buildings n791
Building materials. (See Construction, materials.)

BUILDING MOVING
Reinforced-concrete grandstand moved on rollers, Johannesburg, S. Africa 754
Widening of street, Chicago, necessitates moving building back 40 ft. ....j•599

BUILDING OFFICIALS' CONFERENCE
Meeting (annual), 4th, Detroit, April 24-27 ....n711
Bldg. reconstruction and repair:
Repairing defects in a concrete garage building, Texas. G. Gill ....•743
Steel-frame building altered with use of welding, Neiman-Marcus Bldg., Dallas, Texas. G. Gill ....•350

BUILDINGS
Athletic field house, University of Minnesota, three-hinged steel arch trusses of 220- ft. span and 100-ft. height form main framework. G. H. Herrold ....•578
Atlantic City Convention Hall ....n•905
Chicago, Ill.:
Merchandise Mart, largest building in world planned n756
Whitehall Bldg. and Lawyers Bldg. erected in record time ....•900
China, Mukden hospital has spiral incline in place of elevators. F. V. Haugsted •737
Dallas, Texas, Neiman-Marcus Bldg., alteration with use of welding. G. Gill ....•350
Engineering Building, Chicago. ....•270
Glasgow, Kelvin Hall, utilizes concrete arches. W. L. Scott ....•976
Guaranteed for five years by construction engineers in Cleveland n984
Guarantees, long-time defect....e992
Hearst Publications Bldg., New York City, waterfront foundation complicated by buried log cribs. ..e261; R. H. Chambers ....•280
Higher buildings e575
Houston, Texas, auditorium for Democratic convention has wood-woven arch roof ....•815
Industrial:
American Rolling Mill Co., double sewer lining used ....j•523
Cold-storage plant, Cleveland, O., sliding forms build double walls at high-speed ....•405
General Electric Co., factory at Philadelphia arc welded ...n494, e763, •766
Kohler Company, factory, asphalt floor laid and rolled like street paving. H. Skidmore and J. Donohue.... •8
Mississippi Valley Structural Steel Co., near Chicago, welded shop ....•883
Paper mill projects in Canada total millions n949
Warehouses. (See Warehouses.)
Largest in world planned for Chicago ..n756
Memorial towers. (See Memorials.)
New York City, state office building, foundation bids opened n170
Termite damage, how to prevent e261; T. E. Snyder ....•274
Theaters:
Schine's Theater, Lima, O., heavy balcony construction of concrete. R. C. Reese ....•822
Bundesen, H. N., Dr., ousted as health commissioner of Chicago e2
Public health officials protest n168
Business:
Stock exchange speculation not affecting business e535
Business side of construction, facts and events. (See Construction.)

C
Cableways:
Mt. Hood decision postponed a year ... 388

CAISSONS
Compressed air blows top off pneumatic caisson for a tunnel shaft being sunk in London, England *698
Concrete caisson, for mine shaft, sunk by excavating, loading and use of jets *547
Handling caissons, reinforced concrete, for pier building in new Polish harbor. M. P. O'Brien j*247
Pneumatic caisson method used in building intake tunnel for steam plant, San Diego *364
Pneumatic caissons sealed at record depths, using quick-hardening cement, Kennebec River bridge, Maine. C. K. Allen *484
Poughkeepsie bridge caisson being righted n947
Synthetic atmospheres in compressed air work 116
Semi-cylindrical steel caisson aids in cutting sea wall, steam power plant, Oakland, Calif. j*600
Calibrating wires for a mechanical analysis system. T. E. Stern ..... l 370
California:
Parks, legislature creates division of parks n256
California Sewage-Works Association:
Formed in San Francisco on June 11 .. n984
California State Water Commission:
Supreme Court cannot review act of water commission n210
Cambie, Henry J., 75 years in railroad construction *975
Canada:
Bridges proposed, parliament considers applications n256
Hydro-electric progress during 1927... 286
Lac Seul, English River, provinces agree on dam n294
Railways. (See Railways.)
CANALS
Cape Cod Canal passes to control of the U. S., to be operated toll free 581
Irrigation. (See Land reclamation.)
New York Barge Canal:
Gain in tonnage in 1927 540
Nicaragua, resolution proposing survey of canal routes n529
Welland ship canal:
Construction progress 84
New ports or canals e992
Carbon monoxide health hazard from automobiles 807
Carburetors, new, designed to operate at 45 deg. angle (Zenith-Detroit Corp.) n*376
CEMENT
Early strength:
Used in concrete base pavement, St. Louis. H. Shifrin *24
Modern cements, study of the hydraulic cements of today—P. H. Bates:
I—White, waterproofed and masonry cements e881, 887
II—High-early-strength cements and standard portlands e921, 933
Portland cement:
American cement industry report for November, 1927 151
Trend of portland and accelerated portland cement composition. E. C. Eckel *617
Production and efficiency in the industry; address of G. S. Brown, president of Portland Cement Association a891
Quick hardening:
Caissons sealed at record depths, using quick-hardening cement, bridge construction, Maine. C. K. Allen *484
Sacks:
Cotton bags for cement. Cotton Products Committee starts movement to increase use of n95
Waters, various, effect on cement mortar briquets, tests by French engineers ... *236
CEMENT GUN
Bituminous coating applied by new air-operated gun (Quigley Furnace Specialties Co.) n*258
Cambridge, Mass., Payson Park reservoir, guniting methods and experiences, e463; C. E. Price *474
Stopping leaks by lining with gunite 151
Concrete gun lining work in Duboce tunnel *201
Converted cement gun used for grouting Toltec dam, N. M. A. F. Schramm .. *631
Craftsmanship in guniting e463
Lining old sewers with gunite, St. Louis. E. Paffrath *936
Making pneumatic arch closures in tunnel work. A. Evans j*164
Census:
Ten years too long for state census .. e177
Trade census conducted by Chamber of Commerce of the U. S. shows changing habits in industry e386
Central States Sewage-Works Association:
Organized Dec. 17, 1927 ..... n35
Chamber of Commerce. (See U. S. Chamber of Commerce.)
Channels:
Ship channels proposed for Great Lakes ports, bill in House of Representatives n256
Charts:
Bridge construction progress, graphic charts to report. C. M. Hathaway .. j*29
Chicago, Ill.:
Air-right roads planned n827
Bond issues defeated e611, n642
Bundesen, H. N., Dr., ousting of, as health commissioner. e2
Public health officials protest n168
Elevated boulevard proposed n90
Grade separation in Chicago park *703
Harbor plans made public, report of Major Putnam n168
Moving building back 40 ft. in street widening project j*598
Plans 1933 exhibition 584
Railway facilities. (See Railways.)
Sanitary engineer, A. E. Gorman, discharged e212
Refuses to resign n252
Sewage-works. (See Sewage-works.)
Street repairs, city council approves return to contract system. n529
Traffic. (See Street traffic.)
Water meters. (See Water meters.)
Water supply and water-works. (See Water supply; Water-works.)
CHICAGO DIVERSION OF WATER FROM GREAT LAKES
Canada and U. S. discuss inherent rights e683
Early decision by U. S. Supreme Court possible n374
Chicago Regional Planning Commission:
Annual meeting, 5th, Jan. 24 ..... n209
Chicago Sanitary District:
Construction progress 83
Engineering salaries, technical recognition e202
Studies in ferric salts as coagulants for activated sludge, e139; F. W. Mohlman and J. R. Palmer *147
West Side sewage-works construction at Chicago e341, *345
Chimneys. (See Stacks.)
China:
Levee breaks closed by ancient method, O. J. Todd *587
Chlorination:
What it will not do 510
(See also Garbage and refuse disposal; Sewage treatment; Water treatment.)
Chutes:
Concreting. (See Concreting.)
Transfer excavated material across railroad tracks *746
Cincinnati, O.:
Engine terminal of Big Four Ry. *581
Railway terminal improvements for... *18
Subways. (See Subways.)
Union passenger station authorized by I. C. C. n563
CITIES
Bonds. (See Bonds.)
Garden city, called Radburn, to be built in New Jersey n293, e426
Government. (See Municipal government.)
Growth brings increased need for public works; higher-power formula in action e612
Improvements a source of city revenue, due to increased assessed valuation, tax yield and borrowing power. C. V. Powell *738
Municipal budgets, state control of, in Indiana 276; e463
Offering bonuses to induce industries to locate in the community, unsound business e648
Redistribution of residence population, as in New York City e427
State control of cities e612
Streets. See Streets.)
Traffic. (See Street Traffic.)
CITY PLANNING
Fall River, Mass., fire-swept center being replanned n639
St. Paul, Federal Court upholds condemnation of property n711
Traffic and planning e575
Wisconsin Society of Engineers discuss city planning from different points of view, at meeting in Madison, Feb. 16-18 ..... n335
Zoning:
Cambridge, Mass., plaintiff wins suit n827
New Jersey Legislature adopts zoning act n604
New York City regulations cannot be changed for single property owner 744
St. Louis Engineers' Club to protect zoning plan n984
(See also Building laws and regulations.)
Clay:
Vitrified clay liner plates, practices in placing in sewers *428
(See also Brick and brickwork.)
Cleveland, O.:
City to vote on change from manager to mayor n603
City again votes for council-manager plan e683, n710
Sewage-works. (See Sewage-works.)
Sewers. (See Sewers.)
Cleveland Engineering Society:
Novel exhibit maintained n*760
Cline, Isaac M., Dr., honored by New Orleans for work in the Mississippi flood. n253, e261
Coal handling:
Coaling plant, railway, medium-sized, two-track (Roberts & Schaefer Co.) n*460
Coal mines:
Concrete caisson for mine shaft, Nason, Ill., steam, air and water jets help sinking *547
Coast erosion and protection:
Chesapeake Bay, foreshore protection, L. T. Emory *655
Cofferdams:
Fort Lee bridge, difficult cofferdam work completed e425, n457
COLORADO RIVER
Aqueduct. (See Aqueducts, Los Angeles-Colorado River.)
Boulder Canyon dam:
American Engineering Council opposes project n677
Bill authorizes construction of reservoir and power plant n32
Favorable report on the Swing Boulder dam bill ordered e221, n254, n495
Rival bills introduced in the Senate by Johnson and Phipps n32
Sec'y Work's advisers urge building of dam n90
Survey to be made e879, n905
Temper of House is against Swing-Johnson bill n677
Control projects, developments in 1927 . e57
Silt problem studied by Dept. of Agriculture e684
Colorado, State Board of Health:
Publishes revised laws and rules n253
Colorado, University of:
Highway conference, 2nd annual, to be held Jan., 1928 ..... n34
Columbia River basin. (See Land reclamation.)
COLUMNS
Buckling of columns at protuberances, R. W. Brown j*251
Deflection method for designing lateral bracing, J. C. Van der Mey and F. H. Spitzer, *106; J. W. Pickworth ..... l 370
Earthquakes and the column deflection method for designing lateral bracing, J. W. Pickworth ..... l 370
Eccentric bending in columns, W. C. Spiker, l 708; correction ..... l 904
Common Brick Manufacturers' Association:
Convention, Feb. 13-17; urge co-operation in clay products field n376
Community rights in a sewerage district, Milwaukee 596
COMPRESSED AIR
Air compressors:
Railcar, mounted, portable (Metalweld, Inc.) n*338
Self-propelled gasoline driven compressor cars for railroad use (Chicago Pneumatic Tool Co.) n*339
Blows off top of pneumatic caisson for a tunnel shaft, London *698
Loading blast holes with black powder with aid of compressed air j*415
Synthetic atmospheres in compressed air work, studies by Bureau of Mines ... 116
CONCRETE
Advance in the concrete art during 1927 ..... e52
Aerocrete, a new porous concrete (Aerocrete Corp. of America) *n*259
American Concrete Institute. (See American Concrete Institute.)
Asphaltic concrete used to patch bituminous macadam roads. H. P. Chapman j*28
Construction. (See Building construction; also names of structures.)
Crazing. (See Concrete, shrinkage.)
Curing:
Asphalt emulsion for curing (Barber Asphalt Co.) n1025
Dusting reduced by grinding, factory floors. C. E. Covell a482
Floors. (See Floors.)
High-early-strength:
Made with ordinary cement, for dock wall of harbor, Buffington, Ind. W. Cahill j*412
Quick service for paving work, e3; J. H. Chubb *19
Laboratories. (See Concrete, researches.)
New porous concrete for slabs and floor fill, called Aerocrete n*259
Portland cement concrete, researches in materials-testing laboratory with temperature and humidity control *395
Researches:
Devices that aid laboratory studies in concrete, Un. of Calif. *432
Laboratory, University of California, temperature and humidity control in rooms for concrete study *395
Road yardage. (See Pavements and paving.)
Shrinkage:
Crazing and the growth of hair cracks in concrete; A.C.I. paper. A. H. White, V. A. Aagaard and A. O. L. Christensen a481
Progress of studies on crazing of cement mortars; U. S. Bureau of Standard tests. P. H. Bates and C. H. Jumper a482
Slump, 2-in., delivered in chutes, bridge construction 483
Strength:
Recording strength aids in getting better bridges j*755
Stresses:
Flow under sustained compressive stress; of A.C.I. R. E. Davis ... a481
Surfacer, new high-speed, air-operated (Tousley Tool Co.) n*1025
Tests:
American Concrete Institute. (See American Concrete Institute.)
Carrying capacity of hook anchors; A.C.I. paper. T. D. Mylrea a483
Crazing of cement mortars; U. S. Bureau of Standards tests. P. H. Bates and C. H. Jumper a482
Small beams give valid results in transverse tests of concrete in the field. C. A. Wiepking a483
Ties. (See Railway track and trackwork.
Units:
Standards for concrete building units to remain unchanged n607
CONCRETE AGGREGATES
Air blower removes sticks and debris, Bull Run dam construction. B. E. Torpen j*599

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

Designing mixes with harsh aggregates and placing mixtures under frost conditions. Toltec dam, N. M., e611; A. F. Schramm *631
Require separate sizes of stone for road concrete. R. T. Giles.....n120
Concrete blocks:
Construction of Havana sea wall, casting concrete blocks and piles. C. C. Fitz-Gerald *802

CONCRETE MIXERS
Advance made in mixer standardization. L. Gardner a197
Cementing oil wells to shut out ground water. J. F. Hough *392
Home-made, for limited working space, pipe tunnel at L. & N. R.R. shops...j*523
New 14-S standard building mixer (Ransome Concrete Machinery Co.) n*497
Ratchet-jack legs for erecting portable batching plant (Madsen Iron Works)n*989
Towing over both soft and hard ground aided by new wheel (Marsh-Capron mixers.) n*299

CONCRETE PROPORTIONING AND MIXING
Control and special mixtures for road concrete. e3; J. H. Chubb.....*19
Guniting methods at Cambridge reservoir, sand conditions affect precise proportioning. e463; C. E. Price *474
Separation of coarse concrete into several sizes, of great importance. R. T. Giles a120
Water-cement ratio control in designing concrete mixtures for road work. e3; J. H. Chubb *19
Water-cement ratio, strength specification concrete, for street paving. F. A. Hess *968

CONCRETE REINFORCEMENT
Hook anchors, carrying capacity, tests. T. D. Mylrea a483
Steeltex, new unit for placing floors (National Steel Fabric Co.) n*298
Track with concrete base gives successful results 151
Concrete Reinforcing Steel Institute:
Conference to discuss simplified practice on form dimensions for concrete ribbed floor construction.....n459
Handbook on Reinforced-Concrete Construction n212
Meeting (annual), March 19-21, 1928, Biloxi, Miss. n567
Concrete slabs:
Precast, hasten Imhoff tank construction, Chicago sewage-works e341, *345
Precast reinforced new, called "Light Six" (Federal Cement Tile Co.) n*338

CONCRETING
Belt conveyors:
Remarkable use of conveyors with central control for mixing and placing concrete, Chicago sewage-works e34, *345
Chutes:
Arch dam, Ariz., concrete chuted from towers. *180
Concrete with 2-in. slump delivered in chutes, North Spring St. bridge, Los Angeles a483
Heat loss in chuting ..e611; see also *631
Long drop for concrete chuted to bridge piers, Snake River j*414
Formwork.
Duboce tunnel, forming methods for concrete gun lining work *201
Sliding forms build double walls at high speed, cold-storage plant, Cleveland *405
Grouting. (See Grouting.)
Haulage facilitated by bottom dump truck body n*37
Los Angeles flood-control work, road paver and portable belt conveyor form useful concreting plant j*412
Rapidity of work:
Building erected in ten weeks, Chicago *900
Sliding forms build four six-story walls in 12½ days, cold storage plant....*405
Trestle for delivery supported on bents of scrapped pipe, Grizzly Creek dam j*523

CONCRETING PLANTS
Bull Run dam, air blower removes sticks and debris from concrete aggregates. B. E. Torpen j*599
Chicago, West Side sewage-works construction e341, *345
Paver and conveyor form useful portable plant for Los Angeles County Flood-Control District work j*412
Precast concrete in Havana sea wall. C. C. Fitzgerald *802
Reservoir, Amarillo, Tex., plant placed on spoil bank to obtain gravity flow..*396
Traveling plants line Cascade tunnel. e223, *224
Conference on slate, cement and steel. (See Lehigh Valley Industries Conference.)
Conner, C. N., appointed chief engineer of A.R.B.A. n*604
Connolly, Major D. H., Mississippi River district engineer, to leave work n529
Conservation departments, state:
Indiana, engineering division, work of..a430

CONSTRUCTION
Concrete:
Handbook on Reinforced-Concrete Construction published by C.R.S.I. n212
(See also American Concrete Institute; also names of structures.)
Continued activity and satisfactory outlook e425
Contractors' association work 222
Cost and volume. (See Construction, statistics.)
Costs:
Construction costs analysis, subject at meeting of Illinois contractors.... n92
Cost accounting and depreciation studies are important. D. B. Fegles a197
Cost-accounting system for all public works in Minneapolis. G. A. Moe.. 363
Highway. (See Highway construction, costs.)
Day labor:
Campbell bill, chief opposition from Engineer Corps n710
Campbell bill, early consideration expected in House n373
Cost-accounting, Minneapolis. G. A. Moe 363, e386
Efficiency e919
Equipment:
Credit, better practices sought e993
Developments during 1927 in the field of equipment and materials e56
Equipment consciousness lacking e263
Exhibit reservations coming in for A.G.C. of America, conference n37
Job charges for plant rental maintain city's equipment, Flint, Mich..... 656
Materials and equipment sales practices are bad. J. T. Pardy a198
Mississippi River flood control work, equipment types and capacities appraised. e576; G. B. Massey.....*592
Novel exhibit of Cleveland Engineering Society n760
Price-cutting, evils of..e302; E. Whitehorne n586; e799
(See also names of equipment, as Buckets, Cranes, etc., also Road shows.)
Guarantees:
Long-time defect guarantees ...n984, e992
Largest construction firm in the world organized, United Engineers & Constructors, Inc. n126
Materials:
Developments during 1927 .....e52, e56
Favoring American materials in federal construction work, differences of opinion n710
Foreign, Denver contractor wins case for home product.....n527
Foreign, proposed clause against, A.G.C. call it unfair n495
(See also Wood preservation.)
Progress in engineering and construction during 1927 ..... e50
Quantity survey system. (See Quantity surveys and surveyors.)
Safety measures:
American Institute of Architects, New York chapter, to study health and safety in the building industry n492
Associated Industries of New York State, award to John W. Cowper Co., Inc., for perfect accident-prevention record n294
Building accidents increasing, importance of prevention methods n171
Construction safety again e991
Contractors adopting accident prevention practices. W. F. Austin a197
Industry responsible n758, e764
Statistics:
Business side of construction, facts events that affect cost and volume n44, n136, n176, n214, n260, n300, n340, n378, n424, n461, n498, n534, n568, n609, n646, n682, n716, n762, n798, n834, n878, n912, n954, n990, n1026
Monthly statistics of the construction industry n*40
Statistics and prospects: 1927 volume at maintained peak, 1928 prospect favorable 86
Winter:
Concreting Toltec dam, N. M., e611; A. F. Schramm *631
Sliding forms build double walls at high-speed, cold-storage plant, Cleveland *405
Water-works reconstruction, Newton, N. J. H. G. Payrow *184
Construction Division Association:
Annual convention, to meet in New York, Feb. 10, 1928. .....n255
Meeting criticizes the government for prosecution of contractors n293
Construction Machinery Co., Waterloo, Ia., merged with Marsh-Capron Co., Chicago n1024

CONSTRUCTION PLANTS
Chicago, West Side sewage-works construction e341, *345
Concreting plants. (See Concreting plants.)
Construction technique, progress during 1927 ..... e52
Pile and block casting yard and concreting plant, Havana sea wall. C. C. Fitzgerald *802

CONTRACTING
Bids:
Fixed bidding, only safe rule e799
Quantity survey system. (See Quantity surveys and surveyors.)
Registration of bidders. (See Contractors.)
Developments in 1927 ..... e56
General contracting, improved e426
Highway. (See Highway contracting.)

CONTRACTORS
Advance in negotiations with allied interests e764
Associated General Contractors. (See Associated General Contractors.)
Bonding:
Surety bonding situation improving. F. L. Cranford n198
Construction efficiency e919
Contractors and the new Mississippi levees e881
Co-operation among builders stressed at Miami meeting of National Association of Builders' Exchanges n374
Cost analysis. (See Construction, costs.)
Day labor, lien laws, and licensing contractors. G. B. Walbridge a196
Emergency contracting service e800
False credit endangers contracting for road work. A. J. Parrish a119
Financial worth best criterion of contractor's responsibility. W. F. Creighton a119
General and sub-contractors, relations and duties e426
Guarantee buildings for five years, Cleveland firm n984, e992
Joint activities e222
Loose credits hamper progress in construction. J. C. Wilson a197
Organized contracting has arrived, harmony among contractors e177
Problems of contracting e98
Quantity surveying. (See Quantity surveys and surveyors.)
Registration of bidders proposed by A.G.C. n1022
"Responsible bidders," who are? n495
Restrictions upon those engaged in public work, A. G. C protests n458
Strong credit policy approved by A.G.C. and euipment manufacturers n1024
War camp suits:
Construction Division Association, meeting in New York, government criticised for prosecution of contractors n293

CONTRACTS
How construction contracts were drawn 200 years ago. H. K. Ellis 233
Uniform requirements affecting government contracts, bill before House committee n564
Conventions:
Engineering societies and convention procedure e427
(See also names of conventions.)
Conveyors:
Belt:
Portable, and road paver form concreting plant on Los Angeles flood control work j*412
Co-operation:
Business plus e647
Fuller industrial co-operation e920
Society of Electrical Development bestows McGraw Award for co-operation on W. W. Freeman of Cincinnati ..e97, n127
Core drills. (See Drills and drilling.)
Cost-accounting. (See Construction, costs.)
Cost and volume statistics. (See Construction, statistics.)
County Officials' Division. (See American Road Builders' Association.)
Craftsmanship:
Fostering the crafts e835

CRANES
Full-revolving track crane for general service work (Nordberg Mfg. Co.) ...n*339
New models (Orton Crane & Shovel Co.) n*95
Three-speed, gasoline, flexible in operation (American Hoist & Derrick Co.) n*298
Cross-connections. (See Water mains.)
Cross-sectioning:
Device for plotting cross-sections from instrument height j*413
Rod and protractor for tunnel. D. McFarland j*164
Cuba:
Central highway, progress in construction during 1927. H. W. Ash..... *22
Havana, sea wall, precast concrete blocks and piles used. C. C. Fitzgerald *803
Recently completed engineering school at Havana n*418

CULVERTS
Costs of culverts in highway construction in Missouri 597
Iron culvert, with paved invert, combats erosion (Armco Culvert Manufacturers Association.) *39

D

DAMS
Alcove dam, Hannacroix Creek, N. Y.:
Bids called for, Albany's new water-supply system n1021
Arch:
Concrete multiple-arch dam, Lake Pleasant, Ariz. *180
Constant-angle arch dams with gravity abutments. F. Vogt .....l 707
Novel crest design for thin overpour dams. J. C. Stevens *227; C. H. Howell 1602
Owyhee River, arch-and-gravity concrete dam, e648; J. L. Savage....*863
(See also Dams, concrete.)
Backwater slopes above dams. C. Grimm *902
Computation of. J. B. Macphail....l 1017
Bear River, Calif.:
Débris openings built in spillway *778
Bucks Creek:
Power shovels for handling rock save time j*163
Bull Run dam:
Air blower removes sticks and debris from concrete aggregates. B. E. Torpen j*599

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

Cobble Mountain dam, Mass.:
Springfield authorized to build dam for water supply and power n872
Concrete:
Bear River, Calif., débris openings in spillway *778
Contract let for high dam of reinforced concrete on the Tijuana River, near San Diego n492
Grizzly division dam, trestle for concrete delivery j*523
Mount Union, Pa., water control in excavating foundation. W. W. Gruber *892
St. Francis dam. (See Dams, St. Francis.)
Toltec dam, winter concreting. 611: A. F. Schramm *631
(See also Dams, arch.)
Conowingo dam:
Dam and power house, Susquehanna River, construction progress 84
Construction:
Air blower removes sticks and debris from concrete aggregates, Bull Run dam. B. E. Torpen j*599
Building a rolled-fill dam of prewetted earth, McKay Creek, Ore. e385; R. Lowry *388
Concreting Toltec dam, N. M., in winter. e611; A. F. Schramm.....*631
Plant layouts:
Screening and washing plant, air blower removes sticks and debris from concrete aggregates. B. E. Torpen j*599
Semi-hydraulic method, gravel-fill, Guernsey dam. F. F. Smith *264
Slumps complicate Garza dam construction. J. C. Nagle and T. C. Shuler *772
Trestle for concrete delivery, Grizzley diversion dam j*523
Water control in excavating a dam foundation, Mount Union, Pa. W. W. Gruber *892
Coolidge dam, Gila River, Arizona:
Rapid progress on construction. n*563 .....n*949
Cotter, Ark.:
Storage dam permit granted to White River Power Co. n756
Curved dams, radial or parallel slices in analyzing? B. F. Jakobsen; F. W. Hanna .....l 707
Deadwood dam, Idaho:
To be put under construction early in the spring of 1928 82
Deflecting or damming a stream of several inches to a foot, improved method. F. M. Harm.....j*601
Design:
Arch-and-gravity concrete dam, Owyhee River, floating ring-shaped spillway gate, elevator in dam. e648; J. L. Savage *663
Crest design, novel, for thin overpour dams. J. C. Stevens *227; C. H. Howell 1602
Gravel-fill, semi-hydraulic method of construction, Guernsey dam. F. F. Smith *264
High storage dam for water supply purposes, Lancha Plana *445
Studies on prevention of scour below overfall dams, in connection with Mineral Ridge dam. G. G. Dixon ..*696
Diablo dam, Skagit project, status. 1927 81
Earth:
Hydraulic fill:
Slumps complicate Garza dam construction. J. C. Nagle and T. C. Shuler *772
McKay dam, Umatilla River, Ore.: Building a rolled-fill dam of prewetted earth. e385; R. Lowry ..*388
New earth dam practices e385
Pleasant Valley, earth and rock-fill dam. C. J. Ullrich *864
Leak endangers earth-and-rock-fill embankment n827
Leak now under control n*872
Safety e765
Table Rock Cove dam, Greenville, S. C., failure of outlet pipe causes washout *750, e765, *791
Dam holds while reservoir drains..n827
Echo dam, Salt Lake Basin project: Will be completed early in 1930 82
Failures:
A bad sequence of failures e835
An engineering obligation e880
Greenville, S. C., Table Rock Cove dam threatened by washout *650, e765, *791
Dam holds while reservoir slowly drains n827
New Jersey, failure of non-state-inspected dam under construction. H. T. Critchlow 116
Notable dam failures of the past 472
St. Francis dam. (See Dams, St. Francis.)
Sliding versus scouring e879
Spain, dam failure by sliding a century ago. L. J. Mensch .....l 374
Timber dam intended to fail, LaFarge, Wis. *974
Foundations, overconfidence in grouting to be avoided. H. A. Rands.....l 1017
Garza dam, for Dallas, Tex. water works: Slumps complicate construction. J. C. Nagle and T. C. Shuler *772
Gates spillway. (See Dams, spillways.)
Gibson dam, Montana:
Under construction, to be completed in summer of 1929 82
Gravel:
Rock and gravel-fill, Guernsey dam. F. F. Smith *264
Greenville, S. C. (See Dams, Table Rock Cove.)
Grizzly diversion dam, Bucks Creek project, trestle for concrete delivery j*523
Guernsey dam, North Platte River, Wyo.:
Irrigation and power, semi-hydraulic method of constructing gravel-fill dam. F. F. Smith *264
Impounding dam for storage of flood flows to provide auxiliary water supply for Monroe, La. C. K. Mathews *358
Inspection, in State of Washington....n1020
Kanawha River, new navigation dam to replace existing dams, Nos. 2, 3 and 5 n35
Kennett dam, Sacramento River, Calif.: Proposed by state Dept. of Public Works n605
Kentucky River, power house supported on piers above dam.....*1003
Lac Seul, English River:
Canadian provinces agree on dam. ..n294
Lancha Plana dam, designing a high storage dam for water supply purposes, Mokelumne project 6. .....*445
Radial or parallel slices in analyzing curved dams? B. F. Jacobsen l 707; F. W. Hanna .....l 707
McKay Creek, Umatilla River, Ore.:
Building a rolled-fill dam of prewatted earth. e385; R. Lowry *388
Massachusetts dam for Springfield water supply opposed by Westfield n711
Mexico, Tijuana River, near San Diego, of reinforced concrete n492
Mineral Ridge, Ohio:
Bids wanted n874
Studies on prevention of scour below overfall dams in connection with the design. G. G. Dixon, *696; correction 776
Mokelumne River. (See Dams, Lancha Plana.)
Mount Union, Pa. water supply:
Water control in excavating a dam foundation. W. W. Gruber *892
New Jersey dams now controlled by state 822
New Jersey, Peapack Brook, failure of non-state-inspected dam under construction. H. T. Critchlow 116
Ohio River locks and dams, progress of construction 83
Overpour dams, novel crest design for thin arch type J. C. Stevens *227; C. H. Howell 1602
Owyhee River dam:
Bids opened June 7 .....n985
Design of 405 ft. arch-and-gravity dam, e648; J. L. Savage.....*663
Pacoima dam, Los Angeles:
Nearing completion.....n*906
Pardee dam, Mokelumne project, progress n949
Pleasant Lake dam, Ariz.:
Concrete, multiple-arch dam for irrigation and power, Maricopa County Water Conservation District *180
Pleasant Valley dam, Utah:
Earth and rock-fill dam for irrigation. C. J. Ullrich *864
Leak endangers earth dam n827
Leak now under control n*872
Power at dams, growing interest in n35
Rock fill:
Bucks Creek, Feather River project, power shovels for handling rock save time j*163
Guernsey dam, rock and gravel-fill F. F. Smith *264
St. Francis dam, of Los Angeles water supply:
Fails under full head n*456
All reports agree on defective foundations as the cause of failure....n639
A.S.C.E., committee to collect data on failure n675
Builders to blame for failure, governor's commission finds n527
Cleer seepage, analysis of, might have prevented disaster e723, 728, 784
Commission of engineers finds failure due to defective foundations.... 553
Deficiencies in design as illustrated by this failure. M. H. Gerry, Jr. l 983
Early findings on failure confirmed by Mead committee; faulty foundation e649, n675
Engineer's study of the site after the failure, e499; R. Bennett.....*517
Failure due to lack of geological study. L. Balliet .....l 638
Foundations again indicted by two further engineering reports n605
Geological formation at the site, not suitable for a dam of any type. H. Forbes *596
Great foundation failure. e463, e465; N. A. Bowers, *466; see also .....l 636
Human factor in engineering; dependence on one man's judgment not safe policy e725
Investigations under way ...*466, n491
Los Angeles appropriates additional funds for rehabilitation of area..n756
Personnel of committees on investigations of failure n561
Railway destruction caused by failure; pictures n*492, *493
Review of the catastrophe six weeks after; more data on design and abstracts of reports of investigating committees. e725; N. A. Bowers *27; corrections..... 784
San Francisco engineers discuss technical aspects of the failure....n1020
Sixth report on failure offers new theories, abutments lifted by landslide e879, e880, a895
Sliding probable cause of failure. J. W. Ledoux .....l 638
Criticism. M. M. O'Shaughnessy l 789
Reply. J. W. Ledoux .....l 904
Structural safety factor in the dam. L. R. Jorgensen .....l 982
Saluda River, near Columbia, S. C.: Contract let, August, 1927..... 84
Saluda River, near Greenville, S. C. (See Dams, Table Rock Cove dam.)
San Gabriel dam:
Decision in suit over height handed down by Superior Court of California n493
Spain, sliding causes failure of Puentes dam a century ago. L. J. Mensch ..l 374
Spillways:
Capacity should be provided for excessive floods. A. S. Burgess....l*1018
Débris openings built in spillway of Bear River dam, Calif. *778
Floating ring-shaped spillway gates. e648; J. L. Savage *663
Graphical method of spillage analysis. R. A. Hill, *657; M. D. Casler ....l 789
Stony Gorge, Calif.:
Construction progress n*676
To be finished latter part of 1928.... 82
Table Rock Cove dam: near Greenville, S. C.:
High earth dam threatened by washout *750, e765
Dam holds while reservoir slowly drains n827
Thin dams have many advantages. W. H. Wheeler .....l 205
Thin dams, some essentials for. C. E. Crunsky .....l 416
Thin overpour dams, novel crest design for. J. C. Stevens *227; C. H. Howell l 602
Timber dam intended to fail during high water, small hydro-electric plant, Wisconsin *974
Toe erosion below overfall dams. A. E. Walden .....l 369
Toe erosion of overfall dams, studies on prevention, made for Mineral Ridge dam, Ohio. G. G. Dixon, *696; correction 776
Toltec dam, N. M.:
Concreting the dam: designing mixes with harsh aggregates, grouting with converted cement gun, winter work. e611; A. F. Schramm *631
Whalen dam, Wyo. and Nebraska:
Sand-control works at Fort Laramie Canal intake. e920; I. E. Houk....*922
Wilson dam:
Expansion joints sealed by asphalt grouting. H. Passburg *627
Davis, Dr. H. N., new president of Stevens Institute n493
Denver, Colo.:
Pavements, asphaltic concrete.....*241
Water consumption and sewage discharge, measurements for a year. S. T. Weller *557
Water supply. (See Water supply.)
Water-works. (See Water-works.)
Detroit, Mich.:
Paved streets extended 554 miles in five years 273
Sewers. (See Sewers.)
Tunnels. (See Tunnels.)
Water supply. (See Water supply.)
Water-works. (See Water-works.)
Detroit Metropolitan Sewerage District:
Proposed as a result of River Rouge controversy n296
Diesel engine. (See Engines.)
Dikes:
Resilted borrow-pits provide material for raising dikes j*522
Disasters:
Great disasters during 1927. ..... e57
(See also Accidents.)
Distribution. (See Economics.)
Ditchers. (See Excavating machines.)
Docks. (See Wharves and docks.)
Drags. (See Highway equipment.)

DRAINAGE

Alkali land. (See Land reclamation, alkali land.)
Checking earth slips by drains paralleling road, W. Va. N. F. Hathway *745
Ditches:
Against mole ditching for drainage. Q. C. Ayres, l 251; see also..... *58
Aquatic growth in, not likely where ditches are shaded. J. A. LePrince l 251
Chute for drainage water prevents bank cutting, Imperial Valley j*601
Engineering in agriculture. R. Olney *58
Silt creates problem in ditch maintenance 935
Drained paving used to stabilize road on sliding side hill, California. *199
Florida, Everglades Drainage District bonds held legal n562
Florida Everglades, progress 204
Missouri River Drainage Basin, technical conference, first session, at Omaha.... n34
New Orleans, drainage and flood relief bonds proposed n562, n712
Railway engine terminal, Chicago, screened catchbasins and ashpit outlets *431
Temporary drains for springs in foundation bed of dam, Mount Union, Pa. W. W. Gruber *892
Well points aid tidal marsh excavation, sewage disposal plant, Freeport, L. I..*245

DRAWING AND DRAWINGS

Blueprints:
Keeping the office file intact j*523
Adding two refinements, A. B. Osborne j*599
Dredges and dredging:
St. Mary's River to be dredged n758

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

DRILLS AND DRILLING
Core drills:
For pavement sampling (Sullivan Machinery Co.) n*680
New drill takes perfect right cylinder core from concrete pavements. (H. C. Nutting Co.) n*299
Subway work, New York City, requires heavy drilling through retaining walls j*672
Test drilling for dam sites in Palestine (Sullivan Machinery Co.) *212

E

EARTH SLIDES
Checking earth slips by drains paralleling road, West Virginia. N. F. Hathway *745
Hydraulic removal of landslides from California highways j755
Santos, Brazil e463
Earthquakes:
Building design. (See Building design, earthquake-resistant.)
Greece, effects of recent quake *940
Quake insurance not essential to safe financing of buildings 580
EARTHWORK
Airport, Portland, Ore., graded by filling with dredged material from ship channel. J. H. Polhemus *928
Earth fill stadium in Colorado. L. L. Stimson *813
Earth-moving record claimed 1005
Hydraulic sluicing:
Inexpensive hydraulic fill of swamp makes valuable parking space, St. Paul, Minn. j*753
Removal of landslides from California highways j755
Mississippi River flood control work, equipment types and capacities appraised. e576, e881; G. B. Massey ...*592
(See also Excavation; Highway construction; Levees; Railway construction, etc.):
ECONOMICS
Construction industry holds key to unemployment solution; Foster and Catching's book, "The Road to Plenty." ..e611
Distribution, efficient mechanism needed e303
Purchaser profiteering, an undesirable phenomenon e302; E. Whitehorne n566. ....e799
Education. (See Engineering education.)
Electric Railway Journal wins Associated Business Papers, Inc. award n335
Electric transmission lines:
Tower with rotating crossarm developed, tests *814
Unusual towers on Conowingo transmission lines. F. W. Deck *686
Electricity:
Production in public utility power-plants increases in 1927 366
ENGINEERING
Agricultural engineering. (See Agricultural engineering.)
American and British engineering compared e179
Conservatism and vision e724
Engineering in government e956
Engineering year in review and prospect, an editorial survey e49
The human factor, one man's judgment not safe e725
Irresponsible officials and public sanitation in Indiana. L. S. Finch 549
Looking backward; too much efficiency not cause of economic evils e683
Engineering conservation work, state of Indiana a430
ENGINEERING EDUCATION
Arc welding school, Lincoln Electric Co., Cleveland, Ohio n*532
Brooklyn Polytechnic Institute raises degree standards n34
Carnegie Tech. to have summer engineering courses n709
Economics, educating engineers in, e919; W. E. Wickenden 938
Havana Cuba, recently completed engineering school n*418
Highway engineering. (See Highway engineering.)
New educational ideas e137
Railroad operation course offered by M.I.T. and Boston & Maine R.R. n564
Summer schools for engineering teachers at University of Pittsburgh and M.I.T. n826
Texas water-works short school to meet in Houston n33
University of Southern California, college of engineering created n757
ENGINEERING ETHICS
Code of practice adopted by Illinois engineers n91
Code of practice, A.S.C.E. acts upon two interpretations 195
Illinois Society of Engineers adopts code of practice n91
North Carolina engineers adopt code of practice n254
Engineering failures:
Learning by errors e499
(See also Bridge accidents and failures; Building accidents and failures; Dams, failures, etc.)
Engineering firms:
H. K. Ferguson Co. enlarges its Tokyo branch n295
ENGINEERING FOUNDATION
Hoover appointed to committee n563
Receives gift of $10,000 from Central Hudson Gas & Electric Co. n529
Seeks fund of $2,000,000 ....n641
Semi-annual dinner meeting, May 17 ..n828
Engineering Institute of Canada:
Annual meeting, Montreal, Feb. 14-16; researches in concrete discussed.....n333
Smith, Julian C., elected president n*335
ENGINEERING LAW:
Fair dealing e991
Some recent points in. H. Braasch 595, 817
Engineering News-Record:
Cost and volume index numbers. (See Construction, statistics.)
Filing in fiberboard cases. S. L. Jacobsen j*415
Engineering projects:
Leading projects of 1927 construction.. *73
Major projects in 1927, status 81
Engineering research:
Florida engineering society creates committee on research n256
Lehigh University, Willis A. Slater appointed research professor n530
Progress in scientific development e50
Research graduate assistantships, two, for University of Illinois n210
(See also Concrete, research; Hydraulics, research; etc.)
Engineering societies:
Reciprocal membership proposed. n127
(See also names of societies.)
ENGINEERS
Baltimore, Md.:
More politics and engineering n420
Compensation:
Chicago Sanitary District, technical recognition e262
Technical men, New York City, seek equal distribution of salary increase n371
Protest delay in pay increase....n828
Technical Men get higher pay....n906
German engineers here to inspect water and sewerage systems n905
Graduates now entering the profession e919
Licensing:
Australia, registration of engineers..1001
California registration law to be discussed by Los Angeles Chapter, A.A.E. n420
Developments in 1927; no new state added to list of 22 requiring registration e54
Tennessee Supreme Court upholds law n1019
Municipal engineers should preserve historical data. H. P. Eddy, Jr.....1 638
New York City, Board of Education thanks engineers for public service. n905
Queens Borough sewer investigation, prosecution and defense engage engineers n35
Student engineers e683
ENGINES
Diesel engine installed on Marsh-Capron mixer gives satisfactory results n*533
Diesel, new light, high-speed, for industrial uses (Buda Co.) n*213
Industrial gasoline, new line (Continental Motors Corp.) n*608
Roller type, three new sizes added (Novo Engine Co.) n*532
Equipment. (See Construction, equipment; Highway equipment.)
Erosion. (See Coast erosion; River control and regulation.)
EXCAVATING MACHINERY:
Earth moving mechanized, development of machinery. C. H. Paul *67
Gasoline-shovel, convertible to dragline or crane (Osgood Co.) n*877
New features on small trench machine (Cleveland Trencher Co.) n*95
Single-shaft drive crawler is important new design (Bucyrus-Erie Co.) n*422
Small ladder type ditcher for shallow trench work (Austin Machinery Corp.) n*423
Trailer permits use of trencher on widely separated jobs, Springfield, Mass. water department j670
Trench hoe and skimmer scoop for ½ yard excavator (Harnischfeger Corp.) n*213
EXCAVATION
Chute handles 52,000 cu.yd. of fill across railroad tracks on Pennsylvania highway *746
Earth-moving record claimed 1005
For waterfront foundation, complicated by buried log cribs, Hearst Bldg., New York City. e261; R. H. Chambers ...*280
Tidal marsh excavation aided by well points, sewage-disposal plant, Freeport, L. I. *245
Exhibitions:
Chicago plans large 1933 exhibition.... 584
Cleveland Engineering Society, novel exhibit n*760
Water-works equipment, exhibited at convention of A.W.W.A. n988
(See also Road shows.)
Explosions:
Compressed air blows top off pneumatic caisson *698
Pittsburgh gasholder explosion: Many claims settled n33
Explosives:
Educational film on danger of blasting caps n459
(See also Blasting.)

F

Fall River, Mass.:
Conflagration, caused by lack of proper fire prevention e535
Fire swept center being replanned ...n639
Farm lands in flood-retarding basins. (See Miami Conservancy District.)
Faucette, W. D., elected president of A.R.E.A. n*457
Federal Water Service Corporation of New York City obtains control of stock of the Scranton Gas & Water Co. n127
Fences:
Snow. (See Snow fences.)
Ferries:
Car-ferry landing, three-track, Wabash Railway, Detroit-Windsor. S. M. Smith *228
Files:
Blueprint, keeping intact j*523
Adding two refinements. A. B. Osborne j*599
Fiberboard cases for *Engineering News-Record*, S. L. Jacobsen....j*415
Practical system for maps and plans ..n*761
Profile sheets, extra-long, handled on reversible roller cabinet. W. E. Elam j*753
Fire hydrants:
Surveys and repairs where needed by Knoxville water-works dept. F. W. Albert *659, e800
FIRE PREVENTION AND PROTECTION
Cross-connections, health hazard versus fire hazard. C. W. Sherman a886
Fall River, Mass., conflagration, old lessons repeated e535
Fire walls:
Concrete, surrounding oil tanks, moved 1,000 ft. *232
Florida, fires in the Everglades e535
Pump unit, portable, rotary (Gould Pumps, Inc.) n*259
Sprinkler system operates on 1-in. water service, Springfield, Mass 15
Water tanks, rules for heating to prevent freezing 244
Fire prevention and protection. (See also National Fire Protection Association; also Water mains, cross-connections.)
Flint, Mich.:
Engineering department, job charges for plant rental maintain city's equipment 656
FLOODS AND FLOOD CONTROL
Dams, spillway capacity should be provided for excessive floods. A. S. Burgess l*1018
Drought or flood, opposing requirements in the drainage basin of southern Florida e535
Dutch engineer, Dr. Cornelius Lely to talk in U. S. on flood control n*419
Effect of timber and underbrush in checking flood flow of channel, St. Francis River floodway. C. E. Ramser *541
Emergency stations to check damage, Los Angeles County Flood Control District 105
Flood control through slope correction. W. E. Elam....*996
Graphics of temporary flood storage. R. Hill, *657; M. D. Casler.....l 789
Italy, Po River flood-control works, value of multiple levees. 361
Los Angeles, status 1927 81
Miami Conservancy District:
Administering farm lands in the five retarding basins. C. H. Eiffert *739
Maintenance of flood control works C. S. Bennett *186
Mississippi River. (See Mississippi River.)
Missouri River drainage basin technical conference seeks solution of flood-control problems n34
New England flood, 1927:
Central Vermont Ry. seeks flood aid ..n207
Damage to Boston & Maine R.R. estimated over $3,000,000 745
Floods and roads, reconstruction of highways e1
Railway traffic resumed; the return of the iron horse e221, n255
New Orleans, La., drainage and flood relief bonds proposed....n562
Newton bill for an "inventory of water resources," would lead to flood study as a byproduct e97
Pittsburgh asks inclusion of upper Ohio in any plan of federal flood control ..n129
Power reservoirs not reliable for flood protection e3
Regional self-help, Vermont and New York State. e577
Roads and floods e1
Sacramento, Calif., flooded rivers.....n*603
St. Francis River, Arkansas, resistance to flow in floodway of river. C. E. Ramser *541
Thames River, London:
Caused by tidal bore, heavy rain and snow e97, n207
Flood broke 265-year record.....1005
Vermont to investigate flood control n562, e577
(See also Levees; Rainfall and runoff; Revetments; River control and regulation; Rivers; Sea walls; Stream discharge and velocity.)
Floodways. (See Floods and flood control.)
FLOORS
Asphalt floor laid and rolled like street paving. Kohler company shipping building. H. Skidmore and J. Donohue *8
Concrete, factory, dusting reduced by grinding. C. E. Covell a482

Concrete floor placing aided by new reinforcing unit (National Steel Fabric Co.) n*298
Concrete, standard forms for, recommendation of Bureau of Standards n459
Florida:
Everglades, *ad valorem* tax held constitutional n562
Fires in the Everglades, conflicting requirements of fire protection and irrigation e535
Wind-braced high buildings in the hurricane e342, *351
Florida engineering society:
Creates committee on engineering research n255
Flumes:
Steel pipes and flumes in Imperial Irrigation District are subject to corrosive action 590
Force account. (See Construction, day labor.)
Forests and forestry:
Reforestation of watersheds. E. P. Kable a1012
(See also Floods and flood control.)

FOUNDATIONS

Concrete:
Car-ferry landing, Wabash Railway. S. M. Smith *228
Defective construction, shallow eccentric caissons rebuilt under ingenious shoring system, in Texas garage building. G. Gill *743
New design for anchor bolt tunnels in mill settings j*670
Soil mechanics:
Bearing capacity of soil, a restatement of the basis for rules. C. Terzaghi. 629
Rules for foundations on yielding soils found unsatisfactory, tests made at Nebraska State Capitol. R. H. Chambers 520
Waterfront foundation complicated by buried log cribs, adds to costs, e261; R. H. Chambers *280
Freeman, W. W., receives McGraw Award for co-operation e97, n127

G

Garages:
Repairing defective construction in a concrete building in Texas. G. Gill *743

GARBAGE AND REFUSE DISPOSAL

Baltimore, Md., plants, wastes, except garbage, and ashes, salvaged and tailings incinerated. F. K. Duncan *152
Fertilizer produced at plant of Fontana Farms Co., hog-farm near Los Angeles e684 ....*692
Incineration:
Baltimore, tailings incinerated. F. K. Duncan *152
Incinceration:
Chicago, Ill., opens incinerator n1019
Los Angeles, waste disposal at hog farm e684, *692
Progress in 1927 .... e54
Salvaging municipal rubbish at Baltimore and Los Angeles e179
Syracuse resumes operation of garbage-reduction works n757
Garbage districts:
New York State laws authorize creation of public improvement districts in the five towns of Nassau County 619
Garden cities. (See Cities.)
Gas:
For welding, developments in producing 433
In tunnels. (See Tunnels.)
Production of power gas from the sewage-sludge digestion tanks of Birmingham, England, practiced since 1921.. 404
Gas works:
Ypsilanti, Mich., refuses to sell n949
Gasholders:
Pittsburgh gasholder explosion, many claims settled n33
Gasoline tax. (See Highway economics.)
German Chemists Association:
Water and sewage experts, Americans invited to attend meeting n603
Girders:
Steel:
Plate-girder bridge, erected by arc welding. A. G. Bissell *322
Goethals, G. W., builder of Panama Canal, dies at age of 70 ....e137, n*167
Gorman, A. E., chief sanitary engineer, Chicago, Ill., discharged e221
Refuses to resign n252
Grade crossing accidents. (See Highway accidents.)

GRADE CROSSING ELIMINATION

Baltimore, overhead rail crossing approved n91
New York State bills provide additional elimination n604
New York State, 609 crossings eliminated 441
(See also Highway accidents; also Railway track and trackwork crossings.)
Grade separation. (See Highways; Railway track and trackwork, crossings; Streets.)
Grain elevators:
Port Arthur, Ont., largest in world n909
Grandstands:
Reinforced-concrete grandstand moved on rollers, Johannesburg, South Africa.. 754
(See also Stadiums.)
Great Britain:
Considers means of standardizing engineering practice 633

GREAT LAKES

Chicago's diversion. (See Chicago diversion of water from Great Lakes.)
Improvements favored by Army engineers n711
Pollution of water. (See Water pollution.)
Sanitation—congress, meeting at Gary, Ind., discusses industrial wastes n491
Ship channels for lake ports, proposed in House of Representatives n256

GROUTING

Cementing oil wells to shut out ground water. J. F. Hough *392
Dam foundation, grout holes permanently seal water flow. W. W. Gruber *892
Overconfidence in the grouting of dam foundations to be avoided. H. A. Rands ....l 1017
Toltec dam, N. M., grouting with converted cement gun. A. F. Schramm ..*631
Wilson dam, expansion joints sealed by hot asphalt. H. Passburg *627
Guniting. (See Cement gun.)

H

Halifax, N. S.:
Port warehousing terminal planned ...n418
Hammers:
Electric, light-weight, for contractor's use (Black & Decker) n*715
Gasoline hammer for pavement breaking (Milwaukee Gas Tool Corp.) ...n*213
Harbors. (See Ports and harbors.)
Herminghaus case. (See Water rights.)
Herschel, Clemens:
An editorial appreciation 519
Honor eminent hydraulic engineer, luncheon and testimonial given at the Engineers Club, New York City n*530

HIGHWAY ACCIDENTS

Automobile, deaths from, compared with deaths by drowning e463
Automobile headlights, law not enforced e261, e879
Grade crossing accidents:
Bill in House proposes device for their prevention n372
Decrease in 1927 825
Remedy lies in education 354
Victim liable for negligence, court decides n35
Los Angeles, highest rate of accidents ..e575
Highway conferences:
Colorado University to hold 2nd annual highway conference, January, 1928.. n34
Virginia Military Institute to hold conference Feb. 1928 .... n35
(See also names of highway associations.)

HIGHWAY CONSTRUCTION

Bituminous:
Asphaltic concrete, black-base construction, Denver, Colo. *241
Concrete finishing-machine spreads asphalt surfacing, Oklahoma. G. H. James *510; e535
Oiled macadam, of soft stone. B. E. Gray *268
Rock asphalt laid over old concrete and blade grader used to finish state road, Alexandria, Ind. W. G. Dickey *591
Concrete:
Advanced roadbuilding on Georgia's coastal roads. e955; H. J. Friedman *958
Asphaltic concrete paving practice in Denver, Colo., black-base construction *241
Curing:
Asphalt skin coat used for curing paving j31
Consistency of silicate of soda for curing concrete, tests. R. S. Beightler *316
Desert paving job presents unusual difficulties 23
Design of concrete mixes for pavement. e3; J. H. Chubb *19
New concrete pavement has removable top surface (Sheet Concrete Pavement Corp.) n*38
Roughening surfaces with leaf rake broom, Delaware. C. D. Buck ...j*30
Separation of coarse aggregate into several sizes for the manufacture of concrete. R. T. Giles a120
Water-cement ratio control in designing concrete mixtures for road work. e3; J. H. Chubb *19
Convict labor:
Michigan planning to double force during 1928 ....n563
Costs:
Detailed analysis, subject of Illinois contractors' meeting n92
(See also Highway economics.)
Culverts. (See Culverts.)
Curbs:
Concrete, paving mixer speeds up curb pouring, Detroit j*673
Drained paving used to stabilize road on sliding side hill, California *199
Fill transferred by chute across tracks, Pennsylvania *746
Finishing:
Blade grader used to finish asphalt road surface. W. G. Dickey....*591
Forms:
Design of new road form based on heavy machine requirements (Heltzel Steel Form & Iron Co.) n*38
Grading:
Finish-grader, designed to cut the fine grade after setting highway forms n*37
Gravel roads:
Oiled subgrade stops frost boils in gravel roads. H. G. Nicholson ... 109
Half-width pavement construction, screed designed for n*39
Macadam:
Oiled macadam road construction of soft stone, combination water-bound penetration macadam. B. E. Gray..*268
Materials:
Cuba, central highway, materials supply a big problem. H. W. Ash .. *22
Economics of using local materials in road building, Wisconsin. C. R. Stokes 13
Oil field roads, problems and practices. A. H. Riney *145
Plant layouts:
Checking plant depreciation in road work. W. R. Smith a118
Progress during 1927 .... e53
Record keeping:
Highway bridge construction progress, graphic charts to report. C. M. Hathaway j*29
Soil mechanics:
New soil studies required by road builders. V. R. Burton *624
Soil studies, frost action and colloids. C. Terzaghi ....l 708
Subgrade:
Oiled subgrade stops frost boils in gravel roads, Minnesota experiments on clay and gumbo. H. G. Nicholson 109

HIGHWAY CONTRACTING

Contracting conditions in rural road building, drastic remedies urged by A.R.B.A. e98, a117
Cost analysis, subject of meeting of Illinois Contractors n92
Credit practices in contracting. A. J. Parrish n119
Financial worth best criterion of contractor's responsibility. W. F. Creighton a119
Palliatives for vicious practices in road contracting. A. R. Hirst a118
Spring road bids, a wild scramble e499

HIGHWAY DESIGN

Arterial highway plan, New Jersey approach to Holland tunnel. F. Lavis.. *4
Crowns:
Parabolic and circular arcs for pavements crowns compared, two curves identical. H. O. Olson j*31
Railings:
Wire rope guard rails, tests of wire and fittings by Allegheny County highway dept. C. W. Betz *777

HIGHWAY ECONOMICS

Federal-aid:
Australia, federal road plan now complete 116
Bill authorizing construction program in public lands, vetoed by President, fails n827, n873, e991
Bill for continuance of federal-aid passes Congress n830
President signs bill for continuance of payments n873
Roads leading up to toll bridges, federal aid opposed and defended in House of Representatives n336
Gasoline tax:
Illinois, 2c. tax wiped out by State Supreme Court n457, e501
Massachusetts legislature defeats bill n491
Tax questions e501
Materials, local, economics of using, in Wisconsin. C. R. Stokes 13
Motor carrier taxes:
Connecticut tax on buses in interstate commerce upheld by Supreme Court n374
New York, state will not bear sole expense of roads n640

HIGHWAY ENGINEERING

Road school, Purdue University n93
Short course for highway and municipal engineers at North Carolina State College n492
Traffic problem being given more consideration; function versus form e302
Training school, a maintenance innovation in New Mexico. W. C. Davidson j*29

HIGHWAY EQUIPMENT

Batch box car, new car and boxes for road work (Lakewood Engineering Co.) n*714
Costs for gravel road maintenance, operating expenses determined by close accounting, Michigan. e535; C. F. Winkler 548
Dragging tar-treated road surfaces reduces spattering. G. E. Martin j*600
Drags, discarded rims of truck tires make useful road drag j*163
Graders:
Auxiliary blade on grader makes "single trip outfit" j*413
Finish-grader, designed to cut the fine grade after highway forms have been set n*37
Material body for mounting on maintenance grader (Anthony Co., Inc.) n39
Maintenance equipment for macadam and gravel roads. W. W. Shields a117
Pavement breaker, pneumatic, truck-mounted (Rapid Pavement Breaker Corp.) n*681
Paving mixer speeds up curb pouring in Detroit, Mich. j*673
Power equipment reduces upkeep of rural highways. F. B. Wilkes a117
Power shovels in highway grading, studies by Bureau of Public Roads ...e425
Road shows. (See Road shows.)

Rollers:
Tandem roller in 10-ton size (Galion Iron & Works Mfg. Co.) *38
Rural road work being organized and mechanized; discussions of A.R.B.A. ..a117
Scrapers:
Motor truck scraper improved by hydraulic control (Root Spring Scraper Co.) n*38
Screed, designed for half width pavement construction (Lakewood Engineering Co.) n*39
Surfacing machines:
Concrete finishing-machine spreads asphalt surfacing. G. H. James *510, e535
New model (Concrete Surfacing Machinery Co.) n*37
Tar and asphalt melting kettle for maintenance work (Littleford Bros.) n*38
Tool-heater, oil-burning, combined with asphaltic cement kettle (Littleford Bros.) n*645
Tractors and Trailers. (See Tractors; and Trailers.)
Trucks. (See Motor vehicles, trucks.)

HIGHWAY LEGISLATION
Congressional bills affecting road development, federal-aid roads, toll bridges, etc. n32
House committee to report out two important bills n605
(See also Highway economics, federal-aid roads.)

HIGHWAY MAINTENANCE
Bituminous macadam roads:
Patching with asphaltic concrete, in Ohio. H. P. Chapman j*28
Dragging tar-treated road surfaces reduces spattering. G. E. Martin j*600
Earth slides, checking and removing. (See Earth slides.)
"Easing off" frost boils by snow and ice ramps. H. F. Larson j28
Equipment. (See Highway equipment.)
Frost damage, reports from nine states n641, e649, 668
Gravel roads:
Maintenance equipment for macadam and gravel roads. W. W. Shields ..n117
Oiled subgrade stops frost boils in gravel roads. H. G. Nicholson ... 109
Maintenance equipment for macadam and gravel roads. W. W. Shields ..a117
Michigan, Gogebic County, gravel road maintenance, equipment costs, e535; C. F. Winkler 548
Power equipment reduces upkeep of rural highways. F. B. Wilkes a117
Repairing pavements, new type of service (Asphalt Brick Service Co.) n*37
Snow fence, some economic considerations in using. V. R. Burton a120
Snow fence stored by wiring to right-of-way fence, Michigan. H. A. Clementsen j30
Snow removal progress in 1927-28 ....e2
Tandem patrol and training school, innovations in New Mexico. W. C. Davidson *29

HIGHWAY MARKING
Gage boards guide motorists when highway is flooded j*942
Striping California highways to mark traffic lanes j*671
Tar paint traffic lines increase road capacity. Westchester County, N. Y. C. Macdonald j*28

HIGHWAY RESEARCH
Concrete:
Curing. (See Highway construction, concrete, curing.)
Tin for pouring tars into molds of the various testing apparatus. J. S. Crandell j*524

HIGHWAY SIGNS AND SIGNALS
New electric (Interflash Signal Corporation) n*202
Ohio road-sign paint shop plant and methods. H. E. Neal *10
Signals for highway intersections. L. E. Moore, *238; L. H. Rand ....l 526

HIGHWAY TRAFFIC
Accidents. (See Highway accidents.)
Congestion to be relieved by co-operation, resolutions of Motor Congress 587
Function versus form, highway engineers consider traffic problems e302
Signs and signals. (See Highway signs and signals.)

HIGHWAYS
Advertising signs eliminated from highways, Province of New Brunswick ... 690
Arterial:
Arterial road problems e2
(See also Highways, New Jersey approach to Holland tunnel.)
Australia, federal road plan now complete 116
Bituminous:
Oiled, a modified bituminous or "puddle macadam." B. E. Gray *268
Rock asphalt laid over old concrete, smoothed with blade grader after first rolling, Alexandria, Ind. W. G. Dickey *591
Calif., Imperial Valley, difficulties in desert paving job 23
California, near Crocket, drained paving used to stabilize road on sliding side hill *199
California, striping to mark traffic lanes j*671
Canada, concrete toll highway between Calgary and Banff, Alberta, planned .. n93
Chile, large appropriation for road work 656
Concrete:
Advanced roadbuilding on Georgia's coastal road, e955; H. J. Friedman *958
India experiments with concrete roads 397
Pavement rater detects high and low spots in road surface. H. Andrew j*161
Toll highway between Calgary and Banff, Alberta, planned n93
County Officials' Division. (See American Road Builders' Association.)
County roads, work being organized and mechanized; discussions of A.R.B.A. a117
Cuba, central highway, progress during 1927. H. W. Ash *22
Earth's physical bonds, railroads rather than highways e612
Express highways, Furlow plan calls for building private capital toll roads ...n126
Federal-aid. (See Highway economics.)
Floods and roads; reconstruction in New England e1
Frost damage, heavy, to roads, follows open winter e649, 668
Frost damage, reports from nine states n641
Georgia, advanced roadbuilding on coastal highway, e955; H. J. Friedman *958
Grade separation in Chicago Park *703
Illinois:
Gasoline tax wiped out by Supreme Court n457, e501
Indiana:
Road work in 1927 31
Rock asphalt laid over old concrete smoothed with blade grader after first rolling, state road near Alexandria. W. G. Dickey *591
Intermediate type roads e177
Intersections, signals for. L. E. Moore *238
Japan:
$5,000,000 road-building program planned 507
Macadam:
Oiled macadam, soft stone. B. E. Gray *268
Michigan, Gogebic County, gravel road maintenance, equipment costs, e535; C. F. Winkler 548
Michigan plans to double force of convicts on road work n563
Mileages:
Wisconsin plans 260 miles of concrete and 1,400 miles of gravel and crushed rock surfacing 691
Minnesota, oiled subgrade stops frost boils, experiments on clay and gumbo. H. G. Nicholson 109
Missouri, costs of culverts 597
New Brunswick Province, advertising signs eliminated from highways 690
New Jersey approach to Holland tunnel:
Constructing a highway without grade crossings for 20,000,000 vehicles annually. e2; F. Lavis. *4; J. Johannesson *5
New Mexico, training school and tandem patrol are innovations. W. C. Davidson j*29
New York State Legislature gets highway construction program n295
New York State, will not maintain county highways n640
Ohio:
Bituminous macadam roads patched with asphaltic concrete. H. P. Chapman j*28
State Highway Department, factory for making road-signs. H. E. Neal .. *10
Oil field problems and practices in road building. A. H. Riney, *145. ....
Oklahoma, concrete finishing-machine spreads asphalt surfacing. G. H. James *510, e535
Pan-American highway commission proposed in Congress n170
Progress in 1927 ....e53
Railing. (See Highway design, railings.)
Secretary of Agriculture recommends two highway planning commissions n168
Soil mechanics. (See Soil mechanics.)
South America, highway from Montevideo to Rio de Janeiro planned 817
South Carolina, legislative committee completes investigation of alleged deficit n604
Toll:
Canada, between Calgary and Banff, concrete toll highway planned ... n93
Express highways, Furlow plan calls for building private capital toll roads n126
Water, roadside. (See Water supply, signs placarding pure water.)
Wisconsin:
Construction program for 1928 691
Economics of using local materials in road building, development of gravel and stone deposits. C. R. Stokes 13
Yugoslavia, Belgrade seeks construction loan 518
(See also Pavements and paving; Streets.)
Hinsdale, Ill.:
Water-softening plant substitutes sodium aluminate for alum 616
Hog farm uses nutshells instead of shavings as bedding 590
Hoists and hoisting:
Dump body hoist, power-operated (Ditwiler Mfg. Co.) n*910
Electric, fitted for direct or alternating current (American Hoist and Derrick Co.) n*497
Housing:
Garden city, Radburn, to be built in New Jersey by the City Housing Corporation of New York City n293
Houston, Tex.:
Public and private harbor improvements during 1927 82
Huntley, R. L., retires from Union Pacific system n32
Hurricanes:
Florida:
Wind-braced high buildings in the hurricane e342, *351
Hydraulic jump:
Studies on prevention of scour below overfall dams. G. G. Dixon *696
Hydraulic laboratories. (See Hydraulic research.)
Hydraulic research:
American Society of Mechanical Engineers Hydraulic division to begin survey of hydraulic research n256
Laboratories:
National laboratory opposed by War Department n457
Senate passes bill authorizing laboratory in the Bureau of Standards..n641
Bill to establish laboratory fails in House n873
Hydraulic sluicing. (See Earthwork.)

HYDRAULICS
Backwater slopes above dams, formula for computing. C. I. Grimm *902
Computation of. J. B. Macphail ....l 1017
Flow measurements:
Graphics of temporary flood storage. R. A. Hill, *857; M. D. Casler ....l 789
Mild weather aids New Jersey engineers in keeping water-flow records in streams of the state ....w 478
St. Francis River, Ark., resistance to flow in floodway, effect of timber and underbrush. C. E. Ramser *541
Friction losses:
Sewage-force main, 42-in., at Baltimore, tests in cast-iron main a mile long. C. E. Keffer and R. T. Regester *360
River hydraulics and revetment, Mississippi River. W. W. DeBerard *434

HYDRO-ELECTRIC POWER
Applications and permits:
Cooper, H. L., seeks permit for project on Clark's Fork, Columbia River, n757 ....n1022
Gauley Power Co. of West Virginia and the Washington Electric Co. of Seattle apply for permits n709
Kanawha Power Co. and West Virginia Power Co. apply for rights at the proposed new dam n35
Niagara Falls utilization n830
Northern Connecticut Power Company gets license for project on Connecticut River near Windsor Locks n252
Potomac River, bill against development n949
Quebec Province authorizes project on St. Lawrence River, between Lake St. Francis and Lake St. Louis n758
Rocky Mountain Power Co. applies for site on Flathead River, Montana..n874
Savannah River Electric Co. obtains license n293, n1022
White River, Cotter, Ark., Ozarks Hydro Electric Co. withdraws its application n492
Permit for dam at Cotter, Ark. granted to White River Power Co. n756
Bill authorizing additional employees for Federal Power Commission n561
Canada, progress during 1927 286
Columbia River Basin. (See Land reclamation.)
Conferences:
Midwest power conference, 3d, Chicago, Feb. 14-17 ....n296
Developments in 1927 ....e55
Electricity production in 1927 shows increase 366
Lac Seul, Canada:
Development agreed upon n90
Miller water-power act of New York upheld in test case appeal n1020
Muscle Shoals. (See Muscle Shoals.)
New York State:
Governor again urges establishing state power authority n90
Power authority proposed in bill n334
Ontario asks for additional appropriation for power n494
Oregon, potential resources 208
Permits. (See Hydro-electric power, applications and permits.)
Sacramento River, Calif.:
State Department of Public Works favors large dam for storage and power (Kennett) n605
Sault Ste. Marie votes for private power n93
Survey, results, National Industrial Conference Board 1008
Tennessee River, report submitted by Chief of Engineers n373
(See also Muscle Shoals.)
Use of, increases 273
Water power developed in U. S. on Jan 1, 1928 was 12,296,000 hp 407

HYDRO-ELECTRIC POWER PLANTS
Big Creek project:
Status, 1927 82
Bridge River project:
Status, 1927 81
Bucks Creek. (See Hydro-electric power plants, Feather River project.)
Comparison with steam power, favors the latter e426

Conowingo project:
Dam and power house near the mouth of the Susquehanna River, progress 84
Unusual towers on transmission lines. F. W. Deck *686
Efficiency in e426
Feather River project, Calif.:
Bucks Creek:
Building a penstock to develop a static head of 2,561 ft. O. Speir, Jr. *191
Cross-section rod and protractor used for tunnel work. D. McFarland j*164
High-head project, variety of operations involved *140
Penstock wyes withstand pressure of 2,230 lb. per square inch...j*246
Power shovels for handling rock on rock-fill dam save time.....j*163
Trestle for concrete delivery, Grizzly dam j*523
Kentucky River, Lock and Dam No. 7:
Power house supported on piers above dam *1003
Lake Chelan, Wash.:
Low leakage from a 14-ft. butterfly valve under pressure.....j*525
Outdoor type hydro-electric units.....e387
Saugus, Calif., Power plant No. 1:
Tunnel rod for cross-sectioning. C. C. Keely j*598
Sewage-works, Baltimore, automatic control cuts operating costs. C. E. Keefer *927
Skagit project, Seattle, Wash.:
Diablo dam, status, 1927.....81
Stand-by plants, water-storage vs. steam ..e263
Track shifting machine used on Shannon plant, Ireland j413
Transmission lines. (See Electric transmission lines.)
Units, manufacture by micrometer measurements e956
Western states, eleven, 33 new projects 242

I

Illinois Association of Highway and Municipal Contractors:
Meeting (annual), Dec. 13-15 ..... n93
Illinois Society of Engineers:
Convention (annual), Urbana, Jan. 4-6, 1928 ..... n91
Offers prizes n170
Imhoff tanks. (See Sewage treatment.)
Inclined runways:
Hospital in Mukden, China, has spiral runway in place of elevators. F. V. Haugsted *737
Indiana:
Municipal budget law.....276, e463
State Board of Health to control sanitary plans 411
Weaknesses in public sanitation. L. S. Finch 549
Indiana Engineering Society:
Meeting (annual), Jan. 26-27 .....n210
Indiana State Conservation Department:
Engineering work of a430
Indianapolis, Ind.:
Sewage-works. (See Sewage-works.)
Steel tower for erection of World-War memorial j*522
Industrial wastes:
Pollution of water. (See Water pollution.)
Treatment, research work in Wisconsin.. 818
Industry:
Changing habits, shown by census conducted by domestic distribution department of Chamber of Commerce of U. S. e386
Efficiency of production not cause of economic evils n683
Entering new pathways e764
Industrial plants should be prepared to manufacture military equipment ...e223
Price-cutting, evils of. e302; E. Whitehorne n566; e799
Waste in, eliminating by simplified practice 237
Inland Waterways Corporation:
Report for 1927 941
Institute of Civil Engineers of England:
One hundredth anniversary celebration, Americans to attend n756, e920
Insurance:
Quake insurance not essential to safe financing of buildings; paper before San Francisco chapter, A.I.A. 580
International Association of Road Congresses:
President asked to invite organization to hold next convention in U. S. n374
Iowa City, Ia.:
Water-works conference to be held April 11-14 .....n563
Iowa (State):
Method for computing pavement assessments. F. H. Austin *897
Iron:
Research fellowship on cast-iron n796
Wrought Iron Research Association organized April, 1928 .....n714
Irrigation. (See Land reclamation.)
Italy:
Po River flood-control works 361

J

Jacks:
Jack of 75-ton capacity, operated by oil, weighs 200 lb. (Blackhawk Mfg. Co.) n645
Screw jacks, improvements in design and finish. (Templeton, Kenly & Co., Ltd.) n*459
Jackson, Gen. T. H.; new head of M.R.C. n947, n950, n*986
Jadwin, Gen. Edgar:
Attacks Mississippi River Commission... 221
Defends his flood-control report before House Committee n169
Explains his plan to House Committee..n209
Japan:
Highways. (See Highways.)
Joints:
Water tank, making joint where steel shell joins concrete base. I. E. Flaa *395
Welded:
Unit strength, tabulation of test data, American Welding Society *237
(See also Pipe and pipe lines.)

K

Kansas City, Mo.:
To vote on bond issue for public improvements n841, n828
Kirk, H. J., appointed director of Ohio state highways n*985
Kittitas project. (See Yakima project.)
Knoxville, Tenn.:
Fire-hydrant inspection and repairs. F. W. Albert *859, e800
Kutz, Col. C. W., Mississippi River Commission, transferred to Hawaii n794

L

LABOR
Apprentices:
Certificates of apprenticeship to be awarded by New York Building Congress n170
China:
Kwangtung Conservancy Board labor problems 805
Labor relations in 1927 ..... e56
Unemployment:
Bill to stabilize employment by expansion of public works, introduced in Senate n293, e342
Construction holds key to unemployment problem; Foster and Catching's book, "The Road to Plenty." e611
Facts on e425, n461
Hard times and public works; industrial stabilization needed e342
Plain facts, industry's pace is strong e723
Public-works construction to prevent economic depression e611
Union of Technical Men lists projects on which work could be started ..n371
Laboratories. (See Research under Concrete; Hydraulics, etc.)

LAND RECLAMATION
Alkali land:
Congress provides funds for study of salt problems in relation to irrigation 480
British Columbia, along Kootenay River, reclamation approved n829
California, Lower, irrigation schemes near Mexican border 702
Columbia River Basin:
Preliminary survey n678
Studies continued 286
Two bills for development considered by House committee n170
Costs of flood control and reclamation, farmers in both districts should receive equality of treatment. H. M. Holmes..1 205
Developments during 1927 ..... e57
Ditches. (See Drainage, ditches.)
Florida Everglades, progress 204
Ad valorem tax held constitutional...n562
Irrigation canals:
Desilting 778
Fort Laramie intake, sand-control works, e920; I. E. Houk *922
Resilted borrow-pits provide material for raising dikes, Imperial Valley, California j*522
Irrigation water, large waste of, in seepage from main canals and laterals .. 114
Mexico, National Irrigation Commission projects 85
Pipes for irrigation. (See Pipe and Pipe lines.)
Settlement financing proposed for reclamation, bill in Congress e178, n419
Payments:
Extending time of payment a bankrupting of federal reclamation e880
Making reclamation pay e178, n419
Time for a change of system in dealing with payments e801
Shall more land be reclaimed?—greater yield due to mechanization, no more land now needed. F. H. Newell 695; Q. C. Ayres 1 904
U. S. Bureau of Reclamation:
Refutes charges of exceeding estimates 744
Vale project, Ore.:
Progress. 82
Yakima project:
Kittitas division, construction in progress 82
(See also Drainage.)
Landslides. (See Earth slides.)
Law, engineering. (See Engineering law.)
Legislative freedom e138
Lehigh Valley Industries Conference:
Conference on slate, cement and steel to be held in Easton, Pa., April 25-27 ..n567
Lely, Cornelius, Dr., Dutch engineer, to talk in U. S. on flood control n*419

LEVEES
China, ancient method used to close breaks. O. J. Todd *587
Contractors and the new levees e881
Dallas, Tex., lets contract for levees along Trinity River.....n1019
"Fuse-plug" section ....e501; see also *512
Imperial Valley dikes withstand 100,000-sec.-ft. flood n985
Mississippi River flood control work, equipment appraised in the light of available sources of levee material. e576; G. B. Massey *592
Mississippi River, new levee designs and their construction. W. W. DeBerard. *399
Railroad track jacked up to new grade as levee is raised, Imperial Valley. *490
Resilted borrow-pits provide material for raising dikes, Imperial Valley j*522
Value of multiple levees shown by long-time protective operations, Po River, Italy 361
(See also Floods and flood control; also Mississippi River.)
Light, flare, portable acetylene, for construction operation (Oxweld Acetylene Co.) n*644
Lime:
National Lime Association. (See National Lime Association.)
Limestone:
Asphaltic, notes on the production of ..n953
Loading:
Maximum load for treated poles measured in test series *108
Pole testing, some difficulties. T. R. C. Wilson 1 369
Locks:
Ohio River locks and dams, construction progress 83

LOCOMOTIVES
Coaling plant for handling locomotive coal (Roberts & Schaefer Co.) n*460
English track maintenance and locomotives e577, 747
High-pressure locomotive tested, Switzerland 656
Small articulated locomotives for Sierra Leone, Africa 18
Spring suspended power unit for new gasoline locomotive (H. K. Porter Co.) n*797
London, England:
Subways. (See Subways.)
Los Angeles, Calif.:
Extension of harbor facilities approved n947
Flood control status, 1927 81
Garbage disposal. (See Garbage and refuse disposal.)
Highest rate of traffic accidents e575
To have 44 pedestrian subways. R. H. Bacon *785
Water supply. (See Water supply.)

M

McGraw, J. H., awarded Bok medal for service to advertising e303, n*334
McGraw-Hill, New York, and A. W. Shaw Co., Chicago, merge.....n1021
Madison, Wis.:
Sewage-works. (See Sewage-works.)
Mahoning Valley Sanitary District:
Constitutionality upheld and water supply for Niles and Youngstown planned n91
Malaria:
Ditches clogged by aquatic growth breed mosquitoes. J. A. LePrince.....1 251
Manchuria:
Railway construction, rapid progress in 1927 240
Manila, P. I.:
Additional water supply gravity aqueduct, filtration plant and storage reservoir. P. W. Mack.....*841
Manograph:
New model for water waste surveys...n*715
Maps and mapping:
Aerial photography:
Africa, Zambesi River, Northern Rhodesia, survey by seaplanes..... 269
Work of Air Corps during past year.. 160
Marshall, R. C., Jr., to retire as head of A. G. C. n529
Massachusetts:
Defeats gasoline tax bill.....n491
Massachusetts Highway Association, holds outdoor equipment show, May 9-11. n714, n796
Mats, concrete. (See Revetments.)
Medals. (See Awards.)
Memorials:
George Washington Masonic National Memorial, Alexandria, Va., granite and concrete building, to last through ages. C. Carswell *543
Indianapolis, Ind., World-War memorial, steel tower for erection of.....j*522
Louvain memorial to American engineers, now $31,100 .....n169
More funds needed n676
Smith, M. H., memorial to.....n948
Meters:
For measuring steam (Builders Iron Foundry) n*877
Water. (See Water meters.)
Mexican Federal Highway Commission:
Congress, Mexico City, Oct. 3-6; A.R.B.A. accepts invitation.....n952
Miami Conservancy District:
Administering farm lands in flood-retarding basins. C. H. Eiffert.....*739
Maintenance of flood-control works. C. S. Bennett *186
Micrometer measurement of hydro-electric units e956
Midwest power conference:
Third, held in Chicago, Feb. 14-17.....n296
Military preparedness:
A question of efficiency, industrial plants should be equipped to make war material e223
Milwaukee, Wis.:
New corporation holds option to purchase paver company n175

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

Sewage-works. (See Sewage-works.)
Water-works. (See Water-works.)
Milwaukee Sewerage Commission:
Small communities included in the territory bring friendly suit against city of Milwaukee 596
Mines and mining:
Profitable industry e835
(See also Coal mines.)
Minneapolis, Minn.:
Public works, cost-accounting system for, G. A. Moe 363
Water-works. (See Water-works.)
Minnesota Federation of Architectural and Engineering Societies:
Annual convention, Minneapolis, Feb. 17-18, main topic, Mississippi flood-control n336
Minnesota, University of:
Athletic field house, G. H. Herrold...*578

MISSISSIPPI RIVER

Connolly, Major D. H., district engineer, Memphis, Tenn., to leave post.....n528
Floods and flood control:
Bills before Congress, progress of:
Legislation still in the committee stage n130
House committee on flood control ends its hearings, member insists plans be reviewed by non-military engineers n254
New bill, by Senator Jones, adopts Jadwin plan as basis for legislation n373
Pressure exerted on Congress for early action on flood-control bill n373
No progress; Congress reaches no decision on protective works...e386
Bill favorably reported to Senate, based on the Jadwin plan.....n420
Bill reported in House, changing board personnel, disapproved by President n529
Bill passed by Senate based on Chief of Engineers' report, e535, e536, n561 .....n564
House will probably amend bill....n605
Nearing a vote in Congress on flood-control bill e647
Jones bill passed by House, modified to escape veto n677
President signs the Jones-Reid flood bill n790, e799
Jones-Reid bill, digest of.....e799, 824
Brief summary of events and conditions, W. W. DeBerard..... *63
Case for council, success depends on administrative plan e177
Chicago engineers discuss flood control plans n417
Chief of Engineers:
Allocates funds for work n907
Attacks Mississippi River Commission e221
Defends his engineering conclusions before House committee. n169
Explains his plan to House committee n209
Cline, Dr. Isaac, U. S. Weather Bureau, honored for flood work, n253, e261
Contractors and the new levees.....e881
Contracts for levee work to be awarded in July n1022
Costs of flood control and reclamation, equality of treatment urged, H. M. Holmes .....l 205
DeBerard, W. W., article in issue of Dec. 22, 1927, misquotes attitude of New Orleans engineer, J. F. Coleman .....l 165
Digest of Jones-Reid bill 799, 824
Earth moving in flood control work, equipment types and capacities appraised, e576; G. B. Massey.....*592
Engineer committee recommends further flood relief study.....n252
Flood board completed, C. W. Sturtevant named as third members, e799, n826, n829, n*874.
Flood control through slope correction, W. E. Elam.....*996
Flood protection by law; President signs bill e799
Forecasting flood stages, I. M. Cline *277
Group of superior intellect, Army Engineer Corps .....l 292
Landholder's views in flood control costs, L. W. Stubbs .....l 165
Minnesota engineers discuss flood control at annual convention in Minneapolis n336
Paying for flood control, C. Ayres..l 166
Planning of flood-control work to be placed in hands of experts, proposal of A.S.C.E. e684
Potter, *Col.*, Mississippi River Commission, comments on difference in cost estimate of two flood plans... 27
Q=Ay; legislators should leave flood protection problems to engineers...e501
Reid bill would invest flood control power in Mississippi River body... n33
A riverman discusses the Mississippi; utilization of the basins as detention and desilting reservoirs, R. Williams *110
Senate committee calls Hoover on flood control n336
Today in the Mississippi flood area—
W. W. DeBerard:
VI—The Cairo problem and its proposed solutions e301, *311
VII—New levee designs and their construction *398
VIII—Revetment and some river hydraulics *434
IX—The Cypress Creek diversion down the Boeuf River....e500, *512
Topographic survey urged in House bill n418
Work to be rushed.....n829
Mark Twain on regulating the Mississippi, T. DeL. Coffin.....l 376
Waterway developments 183

MISSISSIPPI RIVER COMMISSION

Attack on, by Gen. Jadwin.....e221
Col. T. H. Jackson supersedes Potter as head n947, n950, e955, n*986, n*1019
Col. Potter comments on difference in cost estimate of two flood plans..... 27
Mississippi Valley:
Land values in, H. N. Pharr.....l 250
Missouri River Drainage Basin technical conference:
First session, at Omaha, Dec., 1927; seeks solution of the flood control and navigation problems of the Missouri n34
Missouri (State):
Special taxes may include cost of supervision of municipal improvements n907
Monroe, La.:
Water polluted by oil wells, necessitates auxiliary supply, C. K. Mathews....*358
Montreal:
Deepening of harbor is planned.....n334
Municipal bonding by fiat.....e343
Public improvements, $30,000,000, referendum on, defeated n295
Typhoid fever cases in 1927 over 5,100 .....n417
Monuments, survey. (See Surveys and surveying.)

MOTOR VEHICLES

Buses:
B. & O. R.R. transfers passengers from railroad terminals in New Jersey to New York City.....e222
Joint state control recommended by L. C. C. e763, 771
Carbon monoxide health hazard.....807
Federal law for regulation of vehicles engaged in interstate commerce, inevitable e302, e763
Headlights:
Consistent record of failure in law enforcement e261, e879
Tractors and Trailers. (See Tractors; and Trailers.)
Trucks:
Bottom dump truck body for wet concrete haulage n*37
Dismantling railway by use of motor trucks and light cars, T. E. Ruse..*328
Dump trucks, designed especially for road work (White Co.).....n*39
Gas-electric drive for trucks.....n607
"Lumberjack," special truck body permits easy unloading (Hughes-Keenan Co.) n*96
New rotary dump hoist (Autocar Co.) n*953
Relay drive, 1½-ton capacity (Relay Motors Corp.) n*377
Rice hulls used by California contractors to dust interiors of trucks in handling wet or clayey material..j673
Road-builder truck, new, 2-ton (Graham Bros.) n*377
Road-building service, three new models (Republic Motor Truck Co.) n*496
Roadbuilding, three-point suspension mounting (Indian Truck Corporation) n*832
Taxation. (See Highway economics.)
Mundelein, Ill., strength specification concrete, F. A. Hess.....*968

MUNICIPAL GOVERNMENT

City manager plan:
Cleveland again votes for council-manager charter e683, n710
Cleveland to vote on change from manager to mayor n603
Newport, R. I., state legislature refuses approval e464
New Orleans:
Recent election gives city large measure of home rule.....e685, n712
Ohio, city managers and home rule charters 819
State control of cities.....e612

MUNICIPAL IMPROVEMENTS

Benefit assessments:
Method used for computing pavement assessments, Iowa, F. H. Austin..*897
Missouri, special taxes may include cost of supervision.....n907
Special assessment finances street widening in Pontiac, Mich. J. R. Pollock and F. C. Brownridge.....*355
Water mains extension financed by tax 269
Bonds. (See Bonds.)
Contractors' subsurface operations planned to reduce street closing time, Akron, Ohio, E. A. Kemmler.....*16
Growth by a power law.....e612
Improvements a source of city revenue, illustrated by increased assessed valuations, tax yield and borrowing power, C. V. Powell.....*738
Syracuse, N. Y., to spend $35,000,000 in ten years n949

MUSCLE SHOALS

Government operation bill passes Senate n564
Probably no legislation at this session of Congress n677
Senate committee on agriculture reports favorably on Norris Muscle Shoals resolution n254
The South and Muscle Shoals.....e919
Title to Muscle Shoals power vested in federal government n33

N

National Association of Builders' Exchanges:
Meeting (annual), Miami, Feb. 6-9; co-operation stressed n374
National Association of Railway Tie Producers:
Annual meeting n952
Program for 10th annual meeting n496
National Automobile Chamber of Commerce:
Meeting, New York City, Sec'y of Agriculture Jardine recommends two highway planning commissions n168
National Conference on City Planning:
Meeting (annual), Texas, May 7-10, n418 n793
National Conference on Street and Highway Safety:
Committee drafts model municipal traffic ordinance n372
National Electric Light Association:
Convention (annual), June 4-8.....n947
National Fire Protection Association:
Meeting (annual), May 7-10.....n790
National Industrial Advertisers' Association:
Conference (annual), 7th, to be held in St. Louis n876
National Industrial Conference Board:
Meeting (annual), New York, May 17..n827
National Lime Association:
Convention, New York City, May, 1928, to be a round table discussion n459
National Lumber Manufacturers' Association:
Meeting (annual), Chicago; indorses standards and trade marks e763, n796
National Paving Brick Manufacturers' Association:
Committee of highway engineers appointed to make study of all types of road street pavements n422
Schlesinger, G. F., becomes manager ..n*948
To expand its work n757
National Safety Council:
Awards to railroads with high safety record n794
National Sand Gravel Association:
Research laboratory inaugurated n760
National Slag Association:
Meeting (annual), June 8; re-elects officers n988
New England Water-Works Association:
Cross-connections discussed, compromise report gets little support at meeting 489, e464, n493
Manual of practice discussed at meeting n294
Montreal next meeting place, announcement at Boston meeting, March 14 ..n493
New Haven, Conn.:
Purchase of water-works contemplated ..e137
Decided against n830
New Jersey Sewage-Works Association:
Meeting (annual), Trenton, March 23-24 n419, n528
New Orleans, La.:
Drainage and flood relief bonds proposed n562
Recent election gives city large measure of home rule e685, n712
Water-works. (See Water-works.)
New York Building Congress:
Apprenticeship certificates to be awarded n170

NEW YORK CITY

Central Park to be irrigated n208
Harlem River, straightening has increased cost of pumping at 179th St. station.. 284
Queens, Borough:
Property values increase after paving, C. V. Powell *758
Sewer investigation, engineers for, named n35
Borough president resigns with charges pending n562
Engineers indicted n1020
Grand jury to investigate n603
Residence population, redistribution of ..e427
Sewage-works. (See Sewage-works.)
Subways. (See Subways.)
Suburban Transit Engineering Board predicts big increase in traffic n170
Technical men seek equal distribution of salary increase..n371, n528, n828, n906
Tunnel, new, under Hudson River, proposed south of 60th St., Manhattan..n295
Bill in State Legislature authorizes Port Authority to build toll tunnels n335
(See also Tunnels, Holland.)
Viaduct pavement, wood-block, buckles in cold weather n374, n*419
Water supply. (See Water supply.)
New York Port Authority:
Bridges. (See under Bridges: Arthur Kill bridges; Fort Lee Bridge; Kill van Kull bridge.)
Tunnels: (See Tunnels, Hudson River.)
New York State:
Bill introduced, placing state architect under Superintendent of public works e222
A.S.C.E. protests limitation of state architect's responsibility n253
Proposed subordination of state architect to lay commissioner opposed n253
Sullivan W. Jones, architect, resigns, e261, n294; correction n458
Control over plans for sewerage and sewage disposal restored to Department of Health e499, n527
Governor rejects three toll bridge bills ..n604
Highways. (See Highways.)
Public Health Council continues stand against cross-connections n494

NEW YORK STATE
Sewerage districts:
Creation of public improvement districts in five towns of Nassau County authorized by laws of the state 619
Water-power authority proposed in bill n334
Newport, R. I., state legislature refuses approval of council-manager plan e464
Niagara Falls:
Measures proposed to distribute flow over falls e301, 332
State Department withholds report of Special International Niagara Board on improvement of Falls e647
North Carolina Society of Engineers:
Code of practice adopted n254
Nutshells supersede shavings as bedding at the Fontana hog farm 590

O

Oakland estuary tube. (See Tunnels.)
Ohio:
City managers and home rule charters.. 819
Oil:
Metal preservative, takes all paint pigment (Detroit Universal Solvent Co.) n460
OIL FIELD ENGINEERING
Concrete fire walls moved 1,000 ft *232
Oil wells:
Cementing to shut out ground water, J. F. Hough *392
Problems and practices in road building, A. H. Rincy *145
Oil tanks:
Steel tanks moved to new sight by floating *232
Oklahoma City:
Big grade separation and union passenger station project 542
Oregon:
Potential water-power resources 268

P

Paints:
Metal preservation oil takes all paint pigment (Detroit Universal Solvent Co.) n460
Parks:
California undertakes state park program n256
New York City, Central park to be irrigated n208
Passaic Valley Sewerage District:
Act, creating the District, has been modified 662
Patents:
Ferguson dock patent again upheld n906
Pavement breaker, pneumatic, truck-mounted (Rapid Pavement Breaker Corp.) n*681
PAVEMENTS AND PAVING
Assessments. (See Municipal improvements, benefit assessments)
Bituminous:
Asphaltic concrete paving practice, black-base construction, Denver, Colo. *241
Concrete-finishing machine spreads asphalt surfacing, Oklahoma, G. H. James *510, e535
Rock asphalt smoothed with blade grader after first rolling, Alexandria, Indiana, W. G. Dickey *591
Upkeep for 49 years of sheet asphalt pavements in Buffalo, N. Y. G. F. Fisk 15
Brick:
Grout outlasts sand as filler, Pennsylvania highway, P. J. Freeman..*805
Concrete:
Asphaltic concrete, Denver, Colo., black-base construction *241
Concrete base, early strength cement, for granite block pavement, St. Louis, H. Shifrin *24
Control and special mixtures for road concrete, e3; J. H. Chubb *19
Core drill for pavement sampling (Sullivan Machinery Co.) n*680
Core drill, new, takes perfect right cylinder core from concrete pavements (H. C. Nutting Co.) n*299
Core tests, Akron, O. E. A. Kemmler *660
Desert, Imperial Valley, difficulties .. 23
New concrete pavement has removable top surface (Sheet Concrete Pavement Corp.) n*38
Paving-base control by core tests, Akron, O. E. A. Kemmler *660
Strength specification concrete, Mundelein, Ill. F. A. Hess *968
Yardage, contract awards during 1927 n175
Yardages (monthly) ..n422, n459, n644, n796, n988
Crowns:
Parabolic and circular arcs compared, two curves identical. H. O. Olson..j*31
Curing concrete paving with asphalt skin coat j31
Desert paving job presents unusual difficulties, Imperial Valley, Calif. 23
Detroit extends paved streets 554 miles in five years 273
Drained paving used to stabilize road on sliding side hill, California *199
Equipment. (See Highways equipment.)
Granite blocks replace wood blocks, St. Louis thoroughfare. H. Shifrin *24
Maintenance:
Buffalo, N. Y., upkeep for 49 years, G. F. Fisk 15
Mundelein, Ill., strength specification concrete, F. A. Hess *968
Pavement rater detects high and low spots in concrete road surface, H. Andrew j*161
Rapid repaving of a busy thoroughfare, St. Louis; wood block replaced with granite blocks, H. Shifrin *24
Repairing, new type of service inaugurated (Asphalt Brick Service Co.)..n*37
Repairs planned to reduce street closing time, Akron, Ohio. E. A. Kemmler.. *16
Research:
Highway committee appointed by N.P.B.M.A. to make study of all types of pavements n422
St. Louis to start huge paving program n603
Screed designed for half width pavement construction (Lakewood Engineering Co.) n*39
Soil mechanics:
New soil studies required by road builders, V. R. Burton *624
Surfacing:
Concrete-finishing machine spreads asphalt surfacing, G. H. James *510
Widening street, rebuilding paving, novel curb design, Pontiac, Mich. J. R. Pollock and F. C. Brownridge *355
Wood block:
Viaduct, New York City, pavement buckles in cold weather ...n374, n*419
(See also Highways; Streets.)
Pennsylvania:
Contracts, drawn 200 years ago, Chester County 233
Penstocks:
Building a penstock to develop a static head of 2,561 ft., Bucks Creek project, O. Speir, Jr. *191
Wyes withstand pressure of 2,230 lb. per square inch. j*246
Permanent International Association of Navigation Congresses:
Major Sultan, Corps of Engineers, American representative n676
Permanent International Association of Road Congresses:
President to invite Association to hold next meeting in U. S. n529
Philadelphia:
Sewers:
Large concrete collector, lined with vitrified clay plates *428
Subways. (See Subways.)
Pile driving and drivers:
Record speed in casting and driving 2,796 piles for a concrete bridge, Lake Pontchartrain, La. e500, *502
PILES AND PILING
Casting and driving concrete piles, Havana sea wall construction. C. C. Fitzgerald *802
Lake Pontchartrain bridge, plant for casting 2,796 piles e500, *502
New, deep-arch type section added to Lackawanna steel sheet piling (Bethlehem Steel Co.) n*715
Spliced piles for 100-ft. lengths for wharf construction. A. M. Shaw, ...j*246
PIPE AND PIPE LINES
Cast-iron pipe:
And a new pipe bank. W. W. Brush a964
Wall castings for cast-iron pipe. T. F. Wolfe, l 250; R. T. Regester .....l 526
Copper service pipes for water. R. B. Morse a965
Flood effect on water distribution system, Springfield, Mass. 21
Friction losses in. (See Hydraulics.)
Ice and leakage troubles on water supply pipe lines 150
Irrigation district, steel pipes corroded by water 590
Jacking pipe lines for 299 ft. through railroad fill. M. P. Mellon j*945
Joints:
Sulphur in sewer pipe joints. J. P. Pike .....l 165
Penstock, Bucks Creek, banded pipe used, protective coating of asphalt paint given. O. Speir, Jr. *191
Perforated metal pipe in crushed stone drains, for checking earth slips. N. F. Hathway *745
Pipe laying:
Caisson, semi-cylindrical, steel, aids in cutting sea wall for installation of pipe, steam power plant j*600
Subaqueous, power shovel with back-digger bucket used, shore of Lake Erie j*415
Subaqeous sewer pipe, shore assembly for laying. P. J. Jones *414
Protective coating of natural asphalt and coal tar keeps water main in service over 58 years *589
Sand cast pipe, new mechanical process for making, developed (McWane Cast Iron Pipe Company.) n*760
Spiral pipe provided with flexible joints (Naylor Spiral Pipe Co.) n*645
Vitrified stone-ware pipes for carrying sewage, joints of cement mortar found best, in South Africa. J. P. Pike ...j*165
Water pipe, 58 years in the ground, still serviceable, San Francisco *589
Wood-stave:
Eliminating chloro-phenol tastes, D. E. Kepner a1014
(See also Culverts; Sewers; Water mains.)
Pipe-threading machines use integral adjustable dies (Borden Co.) n*952
Pittsburgh Equitable Meter Co.:
Establishes research laboratory n258
Pittsburgh gasholder explosion:
Many claims settled n33
Pneumatic digger, new type (Ingersoll-Rand Co.) n*833
Poland:
Danzig harbor, handling caissons for pier building. M. P. O'Brien j*247
Poles:
Combination earth boring machine and pole setter (Highway Trailer Co.) ...n*95
Maximum load for treated poles, measured in test series *108
Some difficulties in pole testing. T. R. C. Wilson .....l 369
Pontiac, Mich.:
To vote on bond issue n711
Widening heavy traffic street. J. R. Pollock and F. C. Brownridge *355
Population:
Redistribution of residence population ..e427
Port Authorities:
Pacific Coast Association to unite ports of Pacific and Far East n794
(See also New York Port Authority.)
Portland Cement Association:
Spring meeting, May 21-23 .....n905
PORTS AND HARBORS
Chicago, Ill., plans are made public, report of Major Rufus Putnam n168
Houston, Texas, public and private improvements during 1927 82
Los Angeles, extension of facilities approved n947
Montreal, deepening is planned n334
San Francisco, Chief of Engineers makes report on 630
Texas, Brazos River to be diverted for benefit of port of Freeport 82
Potter, Col. C. L.:
Comments on difference in cost estimate of flood plans 27
Superseded as head of M.R.C. n947, n950, e955, ...n986, n*1019
Preferred numbers. (See Standardization.)
Price-cutting, evils of, e302; E. Whitehorne n566, e799
Prizes. (See Awards.)
Profile sheets, extra-long, handled on reversible roller cabinet. W. E. Elam ..j*753
PUBLIC HEALTH
Chicago, Ill.:
A. E. Gorman discharged e221
Sanitary engineer refuses to resign n252
Ousting of health officer, Dr. Bundesen e2
Public health officials protest ousting n168
Colorado state board publishes revised rules n253
Engineers in, to receive same status as members of medical profession, object of new bill n336, e341, n829, n837
Indiana State Board of Health to control sanitary improvements 411
New York State, control over plans for sewerage and sewage disposal restored to Dept. of Health e499, n527
(See also Malaria; Typhoid fever; U. S. Public Health Service; Water pollution.)
Public utilities:
Distrust in utility commissions e385
Federal Trade Commission's investigation, first hearing n458
New Haven, Conn., contemplates purchase of water-works of New Haven Water Co. e137, n830
(See also Sewage-works; Water-works.)
Public works:
Construction to prevent economic depression; Foster and Catching's book, "The Road to Plenty" e611
Cost-accounting system in Minneapolis, G. A. Moe 363
Expansion during periods of unemployment, recommended in Senate ..n293, e342
New York City, Union of Technical Men lists projects to reduce unemployment n371
New York State:
Proposed subordination of state architect to lay commissioner opposed e222, n253
A.S.C.E. protests limitation of state architect's responsibility n253
Sullivan W. Jones resigns, e261, n294; correction n458
(See also Bonds; Municipal improvements; also U. S. Department of Public Works.)
Pumping stations. (See Water-works.)
PUMPS
Centrifugal:
Changes from reciprocating to centrifugal water-works pumps. G. H. Fenkell n808
Motor-driven, on oil pipe line service. n377
New lubricator for vertical shaft (Yeomans Bros. Co.) n*423
Portable pump unit, gear-type rotary pump, close-coupled to a gasoline power unit (Gould Pumps, Inc.)..n*259
Sand-pump power unit of special design (Climax Engineering Co.) n*715
Selection of water-works pumps to fit service conditions. F. G. Cunningham a962
Turbine pumping units for Lake Youngs chlorinators at Seattle j*868
Water-works, single pump arranged to serve in place of three, Merritton, Ont. 105
Pupin, Michael, Dr., receives Washington Award for 1928 .....n253
Purchaser profiteering, an undesirable phenomenon, e302; E. Whitehorne n566, e799
Purdue University:
Conference on steel treating, May 10-11 n604
Road school, 14th annual, Jan. 1928 ... n93

Q

Quantity surveys and surveyors:
Movement growing rapidly. A. Simpson, Jr. a197
Quarries:
Rock asphalt quarry operations in Kentucky *797

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

Queens Borough, New York. (See New York City.)
Quincy, Ill.:
Abandons project for municipal bridge n293

R

Radburn, N. J.:
Garden city to be built e293, e426

RAIL AND WATER TERMINALS
Halifax, port warehousing terminal planned n418
Mississippi River waterway developments 183
Mobile, Ala., construction progressing rapidly 83
Rails. (See Railway track and trackwork.)
Railway cars:
Car of special design hauls huge stone slabs. W. C. Hamm j*942

RAILWAY CONSOLIDATION
Delaware & Hudson Co. merger plans fail of approval n35
Eliminating personal profits e799, n827
Kansas City Southern plans may violate anti-trust law, I.C.C. decision n374
Missouri-Kansas-Texas R.R. to be trunk of a new system n561
Rehearing on Van Sweringen merger plan asked n1021
Short lines check mergers e685

RAILWAY CONSTRUCTION
Canada, building Flin Flon Ry. 1008
Canadian National Rys. plan improvements at Toronto n712
Dotsero cutoff of Salt Lake & Western R.R., hearing soon n1021
Double-track, 63-mile, line completed in ten months, connecting C. & O. with Hocking Valley R.R. *304
Edgewood cutoff of Illinois Central completed n947
Manchuria, progress, rapid, in 1927 240
Oregon, I.C.C. again modifies plans for new construction 737
Pecos & Northern Texas Ry. makes application for a 66-mile extension n494
Pennsylvania plans improvements at Baltimore n948
Pennsylvania R.R. plans improvements at Baltimore n374
Pittsburgh & West Virginia, 38-mile extension to be built n1019
Reinforced concrete station has massive arches and beams, Paris-Orleans R.R. *447
Railway crossings. (See Railway track and trackwork; also Grade crossing elimination.)
Railway destruction caused by failure of St. Francis dam; illustrations ...*492, *493

RAILWAY ECONOMICS
Alaska Railroad returns first profit ... 1002
Freight transfer economics, l.c.l. transfer, Chicago e301, *317
Transportation regulation, at the parting of the ways e302
Wise spending e301

RAILWAY ELECTRIFICATION
Canadian National Rys. find Diesel electric cars pay 995
Delaware, Lackawanna & Western R.R. plans electrification of suburban lines n676

RAILWAY ENGINE TERMINALS
Cincinnati, O., steel and creosoted timber for buildings, concrete platform for washing engines, layout and facilities *581
Drains, screened, placed by Illinois Central R.R. on catchbasins and ashpit outlets to prevent clogging *431

RAILWAY ENGINEERING
Course in railroad operation offered by M.I.T. and Boston & Maine R.R. n564
Progress in 1927 ..... e53

RAILWAY FREIGHT HANDLING
Chicago, large terminal yard and transfer station, Chicago & Northwestern Railway e301, *317
Chicago, largest freight transfer station in the world put in operation, C. & N. W. Ry. 83
Chicago, terminal for wholesale produce, proposed n830
Cincinnati, Riverside yards of Big Four Ry., new engine terminal *581

RAILWAY LOCATION AND RELOCATION
Improved methods used in surveys for extending Piedmont & Northern Railway *324
Locating railway from Mexico City to Pacific Coast. G. H. T. Shaw *661
Peru, railway relocated to avoid avalanches *353
Railway maintenance-of-way:
English track maintenance and locomotives e577, 747
Railway operation:
Freight transfer station, near Chicago, of the Chicago and Northwestern Railway e301, *317
Motor vehicles, use of:
A.R.E.A. perfects organization of Motor Transport Division n93
B. & O. R.R. transfers passengers by bus from terminal to center of New York City e222
Progress during 1927 ..... e52

RAILWAY STATIONS
Boston, new North Station for Boston & Maine R. R., contract let 85
Rebuilding under way 308
Cincinnati, union passenger station authorized by I.C.C. n563
Concrete, reinforced, Limoges, France, has massive arches and beams *447
Los Angeles station denied by I.C.C. n829
Oklahoma City, new station, C.R.I.P. Ry. n794
Oklahoma City, new union passenger station, agreement between city and railways 542

RAILWAY TERMINALS
Buffalo, new passenger terminal, N.Y.C. R.R. Co., construction progress 84
Cincinnati, O., improvements *18
Cleveland, passenger terminal, construction progress 84
New York City, B. & O. bus terminal .. e222
Newark, N. J., Pennsylvania R.R. plans terminal n675
Philadelphia, new terminal facilities of Pennsylvania R.R., construction progress 84

RAILWAY TRACK AND TRACKWORK
Ballast:
Tamper, electric gravel, for the lighter types of ballasting material n*338
British track criticised e577, n747
Crossings:
Accident victim liable for negligence, court decides n35
Designed by mechanical analysis (Wm. Wharton, Jr. & Co.) n*338
Grade separation project for Oklahoma City 542
Overhead crossing for Baltimore approved n91
(See also Grade crossing elimination).
Frogs:
Frogless frog, experimental use on the Southern Railway of France *309
Gage:
Broadgaging the N-C-O Railway: in four months 100 miles of wider track laid e*307
Joints:
French three-point rail joint and frogless frog, experimental use on Southern Railway of France *309
Levee track jacked up to new grade as levee is raised, Imperial Valley *490
Rails:
Changes in rail-mill practice, A.R.E.A. reports demand for heavier rails.. 447
Proposed new rail section *1016
Relations between rails and locomotive equipment e577, 747
Transverse fissures in, car for detecting and marking e613, *622
Sperry Service Corp. organized n794
Roadbed:
Track with concrete base gives successful results, experience on Pere Marquette R.R. 151
Spikes:
Pulled by new air machine (Ingersoll-Rand Co.) n*681
Stresses:
Track crossing designed by mechanical analysis. (Wm. Wharton, Jr. & Co.) n*338
Ties:
Creosoting. (See Wood preservation, railroad ties.)
Concrete and steel, composite ties twenty years in track *480
South Africa purchases steel ties from Germany 323
Steel ties increasing on So. African railways 903
Timber ties, outlook for production of a560
Correction 702
Trapezoidal tie plate, efficiency features of (Track Specialties Co.) ..n*339
Treated. (See Wood preservation).
Tracklaying by contract on Santa Fe extension *321
Railway tunnels. (See Tunnels, railway.)
Railway valuation:
Tentative valuation work now complete, President's committee on federal valuation 506
Railway yards:
Boston & Maine R.R. opens new yard in Cambridge n947

RAILWAYS
Africa:
Sierra Leone Government Railway, new articulated locomotives 18
South Africa purchases steel ties from Germany 322
Alaska Railroad returns first profit 1002
Atchison, Topeka & Santa Fe Ry. to finance 66-mile extension of Pecos & Northern Texas R.R. n494
Atchison, Topeka & Santa Fe Railway, tracklaying by contract on extension.. *321
B. & O. R.R., bus terminal in New York City 222
Big Four. (See Railways, Cleveland, Cincinnati, Chicago & St. Louis.)
Boston & Maine, flood damage estimated at $3,000,000 745
Boston & Maine R.R., new North Station in Boston, contract let 85
Rebuilding North Station, Boston 308
Canada:
Canadian National Railways plan improvements at Toronto n712
Canadian National Rys. use Diesel electric cars for branch lines 995
Flin Flon Railway being built 1008
Hudson Bay R.R., terminal port change adds to cost n33
Manitoba mines, railway 85 miles long to be built to mines n35
Stewart, B. C. to the Yukon Territory, application for charter 281
Central Vermont Ry. seeks flood aid ...n207
Chesapeake & Ohio connected with Hocking Valley R.R. by 63-mile double-track line *304
Chicago & Northwestern Ry., freight terminal in Chicago, construction progress 83
Chicago, Milwaukee & St. Paul Ry., bankruptcy reveals sordid business dealing e138
Chicago, Milwaukee & St. Paul Railway reorganization approved by I.C.C. n130
Chicago, Rock Island & Pacific Ry. to build new station in Oklahoma City ...n794
Cleveland, Cincinnati, Chicago & St. Louis Ry.:
Engine terminal at Cincinnati *581
Competition, no more paralleling lines probable in the future e725
Delaware & Hudson Co. merger plans disapproved by Interstate Commerce Commission n35
Delaware, Lackawanna & Western R.R.:
Plans electrification of suburban lines n675
To build new high-level bridge across Hackensack River. e763; M. Hirschthal *779
Treated ties on, economics of 310
Denver & Salt Lake & Western R.R. to build Dotsero cutoff n1021
Dismantling 165-mile Kansas City Northwestern Ry., motor trucks and light cars used. T. E. Rust *329
Earth's physical bonds, railroads rather than highways e612
English track maintenance and locomotives e577, 747
Great Northern Ry. authorized to begin new construction in Oregon 737
Great Northern Ry. opens new branch line in Oregon n793
Haifa to Bagdad, proposed line 190
Hudson Bay Railway, terminal port change adds to cost of construction.. n33
Illinois Central R.R., places bar screens on catchbasins and ashpit outlets, at engine terminal in Chicago *431
India Great Indian Peninsula Railway; revision of statement in *E.N.-R.* of Sept. 29, 1927 616
Kansas City Northwestern Railway, dismantled by use of motor truck and light cars. T. E. Rust *328
Kansas City Southern consolidation plans may violate anti-trust law n374
Lehigh Valley control passes to Pennsylvania R.R. n709
Manchuria, rapid progress in construction 240
Motor vehicles, competition:
Federal law for vehicles in interstate commerce inevitable e302, e763
Motor vehicles, use of. (See Railway operation.)
Mound City & Eastern Ry. Co. authorized to construct new line n793
Nevada-California-Oregon, broadgaging .. *307
Paris-Orleans constructs reinforced concrete station at Limoges *447
Pennsylvania R.R.:
Concrete ties in service twenty years. .*480
New terminal facilities at Philadelphia 84
Plans improvements at Baltimore ...n374
Plans terminal at Newark, N. J. n675
Pere Marquette, experience with reinforced-concrete roadbed proves successful 151
Perre Marquette planning new lines n872
Piedmont & Northern extension disapproved by I.C.C. n841, e725
Piedmont & Northern Railway extension, improved methods used in surveys.... *324
Pittsburgh & West Virginia Ry. to construct 38-mile extension n1019
St. Paul. (See Railways, Chicago, Milwaukee & St. Paul Railway.)
Southern Pacific Railway:
Broadgaging the N-C-O, now under control of Southern Pacific *307
Union Pacific System, R. L. Huntley retires from n32
Vermont, traffic resumed e221, n255
Wabash Railway, three-track car-ferry landing, Detroit-Windsor, S. M. Smith *228
Wrecking and salvaging the metal parts of an abandoned railway in Kansas and Nebraska. T. E. Rust *328

RAINFALL AND RUNOFF
New England storm, Nov. 1927, topic at N.E.W.W.A. n171
New flood flow records for California streams. F. E. Bonner *776; e836
Runoff figures in Vermont flood reach high values. H. B. Kinnison *890
(See also Floods and flood control; Stream discharge and velocity.)

RAPID TRANSIT
Developments in 1927 ..... e55
New York City:
Report by Regional Plan of New York and its Environs n756
Suburban traffic increase predicted ..n170
(See also subways.)
Regional planning:
Chicago Regional Planning Association, 5th annual meeting, Jan. 24 ..... n209
Rochester commission authorized. ..n129
(See also City planning.)

RESERVOIRS
Amarillo, Tex., concrete plant placed on spill bank to obtain gravity flow.... *396
Boulder Canyon. (See Colorado River.)
Cambridge, Mass., Payson Park, guniting, e463; C. E. Price 474
Leaks in 40-m.g. reservoir stopped by lining with gunite 151
Covered and open. C. J. Lauter a963
Cross-wires strung over San Francisco reservoirs keeps seagulls away j*868

Deposition of suspended matter e723
Detroit, clear water reservoir put into service, Jan. 5. ..... n169
Graphics of temporary flood storage. R. A. Hill *657; M. D. Casler ..... l 789
Marin Municipal Water District, costly reservoirs. J. C. Peters a963
York Water Co., Pa., impounding reservoir *962
Plant growth:
A.W.W.A. papers a1013
Chlorination destroys algae, Red Bank, N. J. W. Donaldson *112
Covering of plank and tarpaper to prevent algae growth, Edwardsville, Ill. 771
Plant layouts:
Amarillo, Tex., concrete plant placed on spill bank to obtain gravity flow *396
Power reservoirs not reliable for flood protection e3
Recreational use of:
New Brunswick, N. J., picnic grounds adjoin reservoir, boating and bathing permitted 235
Retaining walls:
Subway work requires heavy drilling through walls, New York City j*673
Revetments:
Mississippi River, revetment, especially concrete mats, and some river hydraulics. W. W. DeBerard *434
(See also Mississippi River.)
Rice hulls used by contractors to dust interior of trucks. j673

RIVER CONTROL AND REGULATION

Concrete skeleton terahedrons prevent bank erosion during floods, California highway j*752
Flood control through slope correction. W. E. Elam *996
Floodway diversions:
St. Francis River, resistance to flow. C. E. Ramser *541
Po River, value of multiple levees 361
Trinity River, Tex., Dallas tests contract for levee system n1019
(See also Levees; also Mississippi River.)
River improvements:
Ha sm River, widening increases pumping cost 284
St. Lawrence river, shoals may be removed 284

RIVERS

Boundary streams, investigations by U. S. Geological Survey n907
Brazos River, Texas, diversion for benefit of port of Freeport 82
Colorado River. (See Colorado River.)
Columbia and Willamette rivers. (See Land reclamation, Columbia River Basin.)
Delaware River:
Hughes to report to New York on legal aspects of plan for additional water supply n170
New Jersey postpones action on compact n639
Mississippi River. (See Mississippi River.)
Missouri River:
Drainage basin technical conference, at Omaha, seeks solution of flood-control and navigation problems n34
Ohio River, locks and dams, progress .. 83
Po River, flood control works 361
St. Francis River:
Floodway, study shows effect of timber in checking flood flow of channel 2,500 ft. between levees. C. E. Ramser *541
St. Lawrence river:
Shoals may be removed 284
St. Lawrence waterway. (See Waterways.)
St. Mary's River to be dredged n758
Ware River:
Boston plans for additional supply of water from Swift and Ware Rivers 85
Boston receives permit to use water .. n491
Yellow River, China, ancient method used to close levee breaks. O. J. Todd .. *587
Rivers and harbors:
Appropriation increased from $50,000,000 to $55,884,310 ..... n295
Rivets:
Tensile working stress for rivets investigated, tests; paper before A.I.S.C. C. R. Young a*188
Discussion S. J. Warberg l 205; H. D. Hussey l 206; A. S. Woodle, Jr. l 374; E. M. Viner l 416; E. dfrey l 416; H. E. Wessman l*602; E. D. Francis l 903; F. P. Witmer l 904; C. R. Young l 904; H. C. Bartlett .. l 946
Road Congresses. (See Permanent International Association of Road Congresses.)
Road graders. (See Highway equipment.)
Road schools. (See Highway engineering.)
Road shows:
All-Western. (See Road shows Western Road and Equipment Exposition.)
A.R.B.A.:
Cleveland, Jan. 9-13, largest show, exhibits eclipse all former records, n132. ..... n173
To hold 1929 show in Cleveland n876
Massachusetts Highway Association holds annual outdoor equipment show, May 9-11, near Boston n714, n796
Mexican government invites Americans to exhibit at show n680
A.R.B.A. to participate n952
Sweden to have a road show in May. e575
Western Road and Equipment Exposition:
To be held in Los Angeles, March 7-11 n376
Roofs:
Bowstring arches make up roof of Glasgow hall. W. L. Scott *976
Concrete precast slab (Federal Cement Tile Co.) n*338
Lamella or wood-woven, for Houston convention hall *815

S

Sacramento, Calif.:
Flooded rivers n*603
Rochester, N. Y.:
Regional planning, commission authorized n129
St. Louis, Mo.:
Repaving of a busy thoroughfare. H. Shirin *24
Sewers. (See Sewers.)
Starts huge paving and sewer program .. n603
Water supply. (See Water supply.)
Water-works. (See Water-works.)
St. Louis Engineers Club:
Burns mortgage n948
Salt in irrigation. (See Land reclamation, alkali land.)
Salt Lake City, large bond issue advised by engineer n711
Salton Sea, Calif.:
Needs more area for evaporation 273
San Bernardino, Calif.:
Unique sewage-works and sewer outfall 769
San Francisco, Calif.:
Authorizes bonds to buy out Spring Valley Water Co. n709
Chief of engineers makes report on harbor 630
New traffic code lessens hazards 749
To vote on two water bond issues, totaling $65,000,000 ..... n604
Water supply. (See Water supply.)
Water-works. (See Water-works.)
Sand:
Research laboratory for the sand and gravel industry n760
Sand-control works at Fort Laramie Canal intake. e920; I. E. Houk *922
Tar sand deposits in Alberta to be developed 974
Sanitary districts. (See names of districts.)
Sanitary engineers:
Bill to give engineers in U. S. Public Service same status as medical profession n336, e341, n829, n837
Chicago, Ill., more politics, A. E. Gorman discharged e221
Refuses to resign n252
Sanitation. (See Public health.)
Sanitation congress, Great Lakes, meeting, Gary, Ind., discusses industrial wastes n491
Saws:
Electric hand saw, new model (Skilsaw, Inc.) n*533
Hand saw permits bevel-sawing to 60-deg. angle (Wodack Electric Tool Corp.) n*832
Timber-sawing machines with air motor (Reed-Prentice Corp.) n*911
Scranton Gas & Water Co. sells to Federal Corporation of New York City n127
Sea walls:
Foreshore protection, Chesapeake Bay, L. T. Emory *655
Havana, Cuba, precast concrete blocks and piles used. C. C. Fitzgerald *803
Seepage:
Clear seepage not always harmless, St. Francis dam disaster proves. e723, 728, 784
Large waste in irrigation water from main canals and laterals 114

SEWAGE

Denver, Colo., water consumption and sewage discharge, study based on measurements for a year. S. T. Weller *557
Overflow from septic tank held a nuisance in Oklahoma 616

SEWAGE DISPOSAL

Fertilizer use of sludge:
Relative values of wet and dry sludge, field tests at Bedford, England 448
Milwaukee, Wis.:
Sludge disposal. T. C. Hatton ..... l 674
Problems of what to do with sludge and how to do it are still unsolved. e139; see also ..... *147, l 674

SEWAGE TREATMENT

Activated sludge:
Ferric salts as coagulants for activated sludge prior to filtration; studies by Sanitary District of Chicago. e139; F. W. Mohlman and J. R. Palmer .. *147
Good effluent 667
Milwaukee, sludge disposal. T. C. Hatton ..... l 674
New York City, Ward's Island sewage-works to use activated sludge process n640
Progress on project n793
Plant for Wahiawa, Hawaii, complete sewage treatment including chlorination. F. M. Veatch *478
Stream - flow aeration, experimental development. H. N. Jenks and M. Levine *809
Chlorination:
Activated sludge plant at Wahiawa, Hawaii, complete treatment, including chlorination. F. M. Veatch .. *478
Havre, Mont., agitation and chlorination tests; process would meet low stream conditions. E. Sandquist and H. B. Foote 1001
Coagulation:
Ferric salts as coagulants for activated sludge prior to filtration. e139; F. W. Mohlman and J. R. Palmer. *147
Imhoff tanks:
Chicago, baffle walls of precast slabs hasten Imhoff tank construction e341 ..... *345
"Know your Imhoff tanks." M. M. Cohn *588
Unique sewage-works and sewer outfall, San Bernardino, Calif. 769
Sedimentation:
Settling tank design. W. E. Holland, l 292; C. H. Capen, Jr. ..... l 292
Sludge digestion:
Deep-pit sludge digestion at Indianapolis. C. K. Calvert *230
Essen, Germany, increasing capacity of plant. A. Kozman *362
Gas collected from sewage-sludge tanks, Birmingham, England 404
Upper Silesia, Poland, orders equipment in U. S. n796

SEWAGE-WORKS

Baltimore, automatic control at hydro-electric plant. C. E. Keefer *926
Central States Sewage-Works Association, organized n35
Chicago, Ill.:
North Side works to go into service during summer of 1928 83
West Side sewage-works construction e341 ..... *345
Cleveland, O., construction progress 84
East Greenwich, R. I., town voted against bond issue n947
Freeport, L. I., excavation aided by well points *245
Havre, Mont., sewage agitation and chlorination tests. E. Sandquist and H. B. Foote 1001
Indiana, weaknesses in public sanitation. L. S. Finch 549
Indianapolis:
Deep-pit sludge digestion. C. K. Calvert *230
To enlarge system n207
Madison, Wis., fourth (Nine Springs) plant completed e724, 741
Milwaukee, Wis.:
Activated-sludge plant, disposal of sludge. T. C. Hatton ..... l 674
Community rights in a sewerage district 596
New Jersey Sewage Association. (See New Jersey Sewage Association.)
New York City, Ward's Island, activated-sludge process indorsed n640, n793
Settling tank design. W. E. Holland, l 292; C. H. Capen, Jr. ..... l 292
Wahiawa, Hawaii, sewage-works of activated-sludge type. F. M. Veatch .. *478
Progress during 1927 ..... e54
San Bernardino, Calif., unique sewage-works and sewer outfall 769
Short-lived, probable average life of plant ten years e724
Stream-flow aeration, equipment for. H. N. Jenks and M. Levine *809
Sewer pipe. (See Pipe and Pipe lines.)
Sewerage districts. (See names of districts.)

SEWERAGE SYSTEMS

Detroit proposes metropolitan sewerage district as a result of controversy with River Rouge n296
Detroit to vote on bond issue n374
Los Angeles County Sanitation Districts, system placed in operation n418
New York State, control over, restored to Department of Health e499, n527
St. Louis starts huge sewerage program .. n603

SEWERS

American Rolling Mills Co., Middletown, O., double lining used j*523
Cleveland, O., Beachwood Village, two sewers built simultaneously to opposite grades *507
Cleveland, O., quicksand tunnel timbered from needle beam. S. H. Murdock e536 ..... *550
Concrete:
Practices in placing vitrified clay liner plates in sewers; Philadelphia building large concrete collector *428
Denver, Colo., continuous gazing of the main sanitary sewers for one year and comparison of discharge with water supplied to city. S. T. Weller *557
Detroit, Mich., extensive program for sewers and sewage-works e2
Lining:
Double lining used in industrial plant sewer, Middletown, Ohio j*523
Joints of cement mortar used in South Africa. J. P. Pike j*165
Lining with vitrified clay plates; Philadelphia building large lined concrete collector *428
Reconditioning old sewers with gunite. E. Paffrath *936
Sulphur compound in sewer pipe joints. J. P. Pike j*165
New York City:
Queens borough sewer investigation, engineers for, named n35
Borough president resigns with charges pending n562
Engineers indicted for fraud n1020
Grand jury to investigate n603
Inquiry may now proceed n418
Pipes. (See Pipe and Pipe lines.)
St. Louis, reconditioning old sewers with gunite. E. Paffrath *936
Storm-water overflows:
Some details of overflows, examples from practice at Hartford, Conn. A. Wells *402
Shipping:
Channels for ships proposed for Lake ports n253

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

Faith in shipping. Jones shipping board bill passed in Senate e262

SHOVELS

Convertible gasoline shovel, crane or ditcher (Bay City Dredge Works) ... n*911
Gasoline, convertible to dragline or crane (Osgood Co.) n*877
Jawed clutch replaces sliding gear (Speeder Machinery Corp.) n*1024
Larger engine for new gasoline power shovel (Bucyrus-Erie Co.) n*910
Power shovels for handling rock save time on rock-fill dam, Bucks Creek ... j*163
Power shovels in highway grading, studies by Bureau of Public Roads ... e425
Tractor, with adjustable filler (Bay City Dredge Works) n*953

SILT

Borrow-pits resulted to provide material for raising dikes of irrigation canals j*522
Colorado River, studies by the Dept. of Agriculture e684
Concreted drop for drainage water in Imperial Valley made necessary by compacted silt j*601
Desilting irrigation canals, Imperial Valley, Calif. 778, e920
Imperial Valley silt creates problem in drainage ditch maintenance 935
Sand-control works at Fort Laramie Canal intake, e920; I. E. Houk *922
Slater, W. A., elected research professor, Lehigh University n530
Smith, Julian C., elected president of Engineering Institute of Canada n*335

SNOW FENCES

Some economic considerations when using snow fence. V. R. Burton a120
Stored by wiring to right-of-way fence, Michigan. H. A. Clementsen j30

SNOW REMOVAL

Buckets for snow loading (Bay City Dredge Works) n*377
Philadelphia, unseasonable snowfall a test of service e683
Progress, 117,000 miles of main roads to be kept clear, winter of 1927-28 .... e2
Soil mechanics:
Road builders require new soil studies, V. R. Burton *624
Soil studies, frost action and colloids, C. Terzaghi ..... l 708
(See also Foundations.)
Specifications index announced by Bureau of Standards n910
Spike puller, air-operated (Ingersoll-Rand Co.) n*681
Spiral incline. (See Inclined runways.)
Springfield, Mass.:
Water supply. (See Water supply.)
Sprinkler system operates on 1-in. water service, Springfield, Mass. 15
Stacks:
Demolishing a 365-ft. brick chimney ..j*162
Stadiums:
Earth fill and wood seats give low-cost stadium, Colo. L. L. Stimson *813
(See also Grandstands.)
Stairways:
Spiral, and spiral runway for wheel chairs in place of elevators in Mukden hospital. F. V. Haugsted *737

STANDARDIZATION

British consider means of standardizing engineering practice 633
Canada Research Council expands its work n757
Preferred number system approved by American Engineering Standards Committee, available for distribution 448
Simplified practice: Bureau of Standards, 18 new recommendations during 1927 237
Standards movement during 1927 ..... e56
(See also Construction, equipment; also names of names of materials; U. S. Bureau of Standards.)
State control of cities e612
Steam-electric power:
Southern California Edison Co., Long Beach, fire walls and oil tanks moved to new site *232
Steam power:
Comparison with hydro-electric plants, favors steam e426
Steam power plants:
Pacific Gas & Electric Co., Oakland, Calif., caisson aids in cutting sea wall to install pipe j*600
San Diego Gas & Electric Co., intake tunnel *364

STEEL

Corrosion caused by stone fly larvae in running water. J. B. Naeumann ... l 946
For residence construction (Steel Frame House Co.) n953
High-strength steels for modern bridges, L. S. Moisseiff 155
Long service tests of thin steel show varying life *589
Pipes and flumes in irrigation district, subject to corrosive action 590
Silicon, problems in fabricating, for Delaware bridge. H. T. Morris 231
Steel shells in service 39 years still sound and serviceable, piers of viaduct in Los Angeles *590
Steelwork. (See Building construction: Welding.)
Steel treating conference:
Purdue University, May 10-11 ..... n604
Stevens Institute, Hoboken, N. J.:
Davis, Dr. H. N., selected president n493
Storm-water overflows. (See Sewers.)
Streams:
Deflecting or damming a stream of several inches to a foot, improved method. F. M. Harm j*601
Stream discharge and velocity:
Unprecedented stream-flow per unit of drainage area, Vermont flood. H. B. Kinnison *890
Water-flow records, mild weather aids New Jersey engineers in keeping *478
(See also Rainfall and runoff.)
Stream pollution. (See Water Pollution.)

STREET TRAFFIC

Accidents. (See Highway accidents.)
City planning and traffic e575
Co-operation sought to relieve congestion, resolutions of Motor Congress 587
Facilitating traffic and safety 519
Los Angeles has highest rate of accidents e575
Model traffic ordinance for city use drafted by Highway Safety Committee n372
Parking:
Chicago, no parking in the loop district, order of the City Council ... e1
No parking ordinance a success ... e139
Survey to prove benefits of no-parking ordinance e500
Pedestrian subways. Los Angeles to have 44. R. H. Bacon *785
Relief and control, materially furthered during 1927 ..... e55
San Francisco, new code lessens traffic hazards 749
Signals:
Facilitating traffic and safety 519
New electric signal (Interflash Signal Corporation) n*212

STREETS

Air-right roads planned by Chicago n827
Akron, O., pavement repairs planned to reduce street closing time. E. A. Kemmler *16
Chicago, Ill., elevated boulevard proposed n90
Contract repair work, approved by Chicago City Council n529
Detroit extends paved streets 554 miles in five years 273
Grade separation, highway, in Lincoln Park, Chicago *703
Widening:
Pontiac, Mich., widening heavy traffic street. J. R. Pollock and F. C. Brownridge *355
(See also Highways; Pavements and paving.)

STRESSES

Bridge. (See Bridge stresses.)
Calibrating wires for a mechanical analysis system. T. E. Stern ..... l 370
Column deflection method for designing lateral bracing. J. C. Van der Mey and F. H. Spitzer, *106; J. W. Pickworth ..... l 370
Columns, buckling of, at protuberances R. W. Brown l*251
Columns, eccentric bending in. W. C. Spiker ..... l 708
Concrete arches of 100-ft. span, stresses important. W. L. Scott *976
Concrete flow under sustained compressive stress, A. C. I. tests. R. E. Davis a481
Earthquake resistance. (See Building design, earthquake-resistant.)
Maximum load for treated poles measured in tests series *108
Some difficulties of pole testing, T. R. C. Wilson ..... l 369
Mechanical analysis of structures. M. Berman ..... l 206
Tensile working stress for rivets investigated, tests; paper before A.I.S.C. C. R. Young a*188
Discussion. S. J. Warberg, l 205; H. D. Hussey, l 206; A. S. Woodle, Jr., l 374; E. M. Viner, l 416; E. Godfrey, l 416; H. E. Wessman, l*602; E. D. Francis, l 903; F. P. Witmer, l 904; C. R. Young, l 904; H. C. Bartlett, l 946.
Wind pressures. (See Wind pressures; also Building design, wind-resistant.)
Wood surfaces inclined to the grain, compressive stress, study of test results, new formula. W. R. Osgood ... *243
Structural Engineers Society of New York: Organized n906
Sturtevant, C. W., named as third member of Mississippi Flood-Control Board, e799, n826 ..... n829, n*874
Submarines:
"S-4":
Both captains blamed for sinking, e341 ..... n371
Half retrieved; salvage forces raise submarine e463
Hope for a real investigation e97

SUBWAYS

Cincinnati, municipal subway, plans for utilization 83
London:
Automatic underground railway handles London's mail *770
New York City:
Bronx subway:
Bids for tunnel under Harlem River n208
Construction progress 85
Eighth Ave. subway:
Work requires heavy drilling through retaining walls j*672
53rd St. crosstown subway:
Land section headings holed through n168
Pedestrian:
Los Angeles will have 44 subways, R. H. Bacon *785
Philadelphia:
Construction progress 85

SURVEYS AND SURVEYING

Aerial. (See Maps and mapping, aerial photography.)
Bench marks and monuments, combination, Union Oil Co. of California j*248
Hydrographic:
Salton Sea, Calif., needs more area for evaporation, U. S. Geological Survey shows 273
Leveling:
First-order leveling in New England during 1927, U. S. Coast and Geodetic Survey 667
Leveling rod:
First-order leveling, design and construction of rod. D. L. Parkhurst *367
Railway. (See Railway location and relocation.)
Texas-Oklahoma boundary surveyed in seven weeks 394
Topographical survey monuments used by Reading, Pa. E. C. Weber j*670
Sweden:
Road show, Goteborg, May 18-20 ..... e575
Syracuse, N. Y., resumes operation of garbage-reduction works n757

T

Tampers:
Electric gravel tamper of unique design (Electric Tamper & Equipment Co... n*338

TANKS AND STANDPIPES

Accidents:
Steel tank of 40,000 gal. falls on high building during high wind in New York City n208
Elevated tanks for water-works systems, G. H. Fenkell a806
Heating elevated water tanks. W. P. Tarbell ..... l 166
Heating water tanks to prevent freezing, rules for 244
Lowering a 400,000-gal. elevated tank, Quincy, Mass. E. S. Clark *869
Marin Municipal Water District. J. C. Peters a963
Oil. (See Oil tanks.)
Steel regulating tanks, cost of water-storage in j*523
Water tank, making joint where steel shell joins concrete base. I. E. Flaa.. *395
Water tank, reinforced concrete, unusual tank and tower structure j*247
Taxation:
Benefit assessments. (See Municipal improvements.)
Florida Everglades *ad valorem* tax held constitutional n562
Gasoline tax. (See Highway economics.)
Indiana, municipal budget law as basis for taxes 276, e463
Motor carrier taxes. (See Highway economics.)
Teredos:
Protecting timber against *teredo navalis*, R. A. Marr and R. A. Marr, Jr. *368
Termites:
Damage to buildings, how to prevent, e261; T. E. Snyder *274
Tetrahedrons, concrete skeleton, prevent bank erosion during floods j*752
Tests and testing:
Apparatus:
Tins for pouring tar into molds. J. S. Crandell j*523
(See also names of materials and structures; also Highway research.)
Texas:
Brazos River to be diverted for benefit of port of Freeport 82
Water-works short school to meet in Houston n33
Tides:
Highest in world along Atlantic coast.. 749
Ties. (See Railway track and trackwork.)
Tile:
Damp-proof tile- and- brick walls, e262; P. H. Bevier *285
Towers:
Steel falsework, for masonry erection, World-War memorial, Indianapolis ... j*522
Transmission line. (See Electric transmission lines.)
Track-shifting machine used on construction of the Shannon hydro-electric plant j413
Tractors:
Crawler tractor, 20 hp. capacity (Caterpillar Tractor Co.) n*460
New crawler tractor (Trackson Company) n952
New model, for highway construction (Cleveland Tractor Co.) n*715
Trade statistics:
Cement industry, American, report for November, 1927 151
(See also Construction, statistics.)
Traffic. (See Highway traffic; Street traffic.)
Trailers:
Hydraulic-dump crawler trailer of heavy construction (Athey Truss Wheel Co.) n*833
Special drawbar used on new crawler-type (Miami Trailer-Scraper Co.) ... n*877
Transmission lines. (See Electric transmission lines.)
Transportation:
Interstate bus regulation recommended e763, 771

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news

Regulation, federal: at the parting of the ways e302, e763
Trenching and trenching machinery. (See Excavating machinery and Excavation.)
Trestles:
Concrete, across Lake Pontchartrain, Louisiana, plant and methods employed e500, *502
Trial balance; world conditions during the past six months e991
Trucks. (See Motor vehicles.)

TRUSSES

Parabolic truss bridges, gradually disappearing. R. Fleming *748
Some early facts. G. Lindenthal ..... l 789
Roof trusses of special design, arc welded factory building, Philadelphia *766
Steel arch, three-hinged, 220-ft. span and 100-ft. height, form main framework of athletic field house, University of Minnesota. H. Herrold *578
(See also Bridges; also Building design.)

TUNNELS

Accidents:
Air pressure burst out the deck of a pneumatic caisson for a tunnel shaft in London *698
Asheville, N. C., cave-in buries equipment n756
Cave-ins delay trains, L. & N. R.R., Tennessee n711
Anchor bolt tunnels in mill foundations j*670
Arch closures, pneumatic, successful method for making, Chelan tunnel, Wash. A. Evans j*164
Asheville, N. C., large section rock tunnel, construction *441
Bridge River project, status, 1927 81
Cascade tunnel, of Great Northern Ry.:
Electrically operated e223
Holed through, May 1 ..... n756
Status, 1927 81
Traveling concrete plants line tunnel e223; *224
Cross-section rod and protractor for tunnel work, used on Bucks Creek project. D. McFarland j*164
Cross-sectioning, rod for. C. C. Keely. j*598
Detroit River, twin vehicular tunnels:
Contract let and sub-bids being called for 84
Work begun, to be partly shield driven and partly preformed sections 978
Duboce tunnel, San Francisco, concrete gun lining work, supplemented with grouting *201
Gases in:
Driving a rock tunnel, Peru, Central railway of *353
Harlem River. (See Subways, New York City.)
Hetch Hetchy project. (See Water supply, San Francisco.)
Holland tunnel under Hudson River:
New Jersey extension of tunnel highway, e2; F. Lavis, *4; and S. Johannesson *5
Hudson River, new tunnel proposed from 60th St., Manhattan to Hudson County, N. J. n295
Bill authorizes Port Authority to build toll tunnels south of 60th St., Manhattan n335
Intake tunnel at San Diego built by novel pneumatic caisson method *364
Lachine Canal, Montreal:
Plans approved n757
Lining:
Concrete gun lining, Duboce tunnel, San Francisco, forming methods ... *201
Traveling concrete plants line Cascade tunnel e223, *224
Moffat tunnel:
Denver board must decide soon on tunnel use n209
First train run through, Feb. 26, 1928 ..... n371
Formally opened, Feb. 26 ..... e341, n371
Future of the Moffat tunnel, construction of cut-off may be necessary e341
Rental greater than hauling costs of railroad n950
Status, 1927 82
Ventilation for steam locomotives ... *994
Musconetcong tunnel, N. J.:
Headings meet n1019
Needle beam bracing for quicksand sewer tunnel, Cleveland, Ohio. e536; S. H. Murdock *550
Nevada Irrigation District, holed through n794
Oakland estuary tube, Calif.:
Construction methods. S. W. Gibbs .. *100
Holed through Jan. 9 ..... n171
Status, 1927 81
Peru, Central Railway of, rock tunnel on a relocation *353
Railway:
Cascade tunnel. (See Tunnels, Cascade.)
Central Railway of Peru, relocated to avoid avalanches *353
Moffat tunnel. (See Tunnels, Moffat.)
Musconetcong. (See Tunnels, Musconetcong.)
San Diego, intake tunnel for steam plant, built by novel pneumatic caisson method *364
Subaqueous. (See Tunnels: Holland; Oakland estuary tube.)
Subways. (See Subways.)
Toll:
Detroit River, contract let and work begun 84, 978
Hudson River, New York City, south of 60th St., Manhattan, new tunnel proposed n295
Bill authorizes Port Authority to build toll tunnels n325
(See also Tunnels, Holland tunnel.)
Toro tunnel, Santa Barbara, Calif.:
Record work of one machine and hand mucking j*25
Ventilation:
Moffat tunnel ventilation for steam locomotives *994
Wachusett-Coldbrook water tunnel:
Contracts let n758
Zion National Park, Colo., long highway tunnel 662
Turbines:
Test codes discussed by eight nations .. n952
Three, largest yet installed in Europe, Ryburg-Schorstedt, Switzerland ... n908
Capacity of European turbines, J. V. Zahlen ..... l 1017
(See also Hydro-electric plants; Waterwheels.)

TYPHOID FEVER

Continued decline in U. S. e955, 969
Decline in 1927 286
Montreal cases in 1927 over 5,1000 .. n417
Rhinelander, Wisc., with high typhoid rate will not purify water 847
St. Leonard, N. B., water-borne typhoid .. 553
(See also Water mains, cross-connections.)

U

Unemployment. (See Labor.)
United Engineering Society:
Foundation endowment fund receives gift of $10,000 from Central Hudson Gas & Electric Corporation n529
Seeks fund of $7,000,000 ..... n641
United Engineers & Contractors, Inc.:
Largest construction firm in the world organized by merger of four companies n126
U. S. Bureau of Reclamation. (See Land reclamation.)

U. S. BUREAU OF STANDARDS

Commercial standards group, new simplified practice recommendations ... 237
Crazing of concrete, tests; A.C.I. paper. P. H. Bates and C. H. Jumper a482
Research on common brick 629
Simplified practice on form dimensions for concrete floors recommended n459
U. S. Chamber of Commerce:
Extends its activities into engineering fields n792
U. S. Coast and Geodetic survey:
Transfer to U. S. Geological Survey recommended by Secretaries Hoover and Work n34
Opposition developed to the proposal .. n295
U. S. Congress:
Hurried legislation e879
Lobbies and "blocs"; concerning legislative freedom e138
U. S. Department of Public Works:
Reorganization movement will probably cease e99
Transfer to Dept. of the Interior debated in House n605
U. S. Geological survey:
May get inland geodetic work, recommendation of Secretaries Hoover and Work n34
Opposition developed to the proposal .n295
U. S. Government:
Secretive administration e647
U. S. Navy:
Early ships, especially the "Ranger" with John Paul Jones in command. L. F. Bellinger ..... l 526
U. S. Public Health Service:
Aid to Vermont: correction 109
Sanitary engineers to receive same status as members of medical profession object of new bill n335, e341
President vetoes bill enlarging facilities n829, n837
U. S. Weather Bureau:
Forecasting Mississippi flood stages. I. M. Cline *277
Little progress e575

V

Valuation:
Property valuations in cities increase after paving. C. V. Powell *758
(See also Railway valuation.)
Valves:
Cast-steel, unusual size and design, St. Louis waterworks n876
Fire hydrants and valves. J. I. Prugh .. a966
Low leakage from a 14-ft. butterfly valve under pressure, Lake Chelan hydro-electric development j*525
Vermont:
To make flood control surveys ... n562, e577
U. S. Public Health Aid to the state, correction of issue, Dec. 1, 1927 109

VIADUCTS

Kansas City, Mo., steel viaduct masked as arch structure. S. E. Berkenblit .. *620
Los Angeles, First St., steel shells of piers in service 39 years, still sound .. *590
New Jersey approach to Holland tunnel Viaduct design and structure. S. Johannesson *5
New York City, wood block pavement buckles in cold weather n374, n*479
Virginia Military Institute to hold highway conference, Feb. 1928 ..... n35
Vital statistics:

W

Walls:
Brick, weathering of 485
Exterior curtain wall construction, damp-proof tile-and-brick. P. H. Bevier .. *985
Fire. (See Fire prevention and protection.)
Warehouses:
Halifax, port warehousing and manufacturing terminal planned n418

WATER

Distilled water, disintegrating effect on cement mortar briquets, tests *236
Irrigation water, large waste in seepage. 114
Safe supplies marked by seals in Illinois j*867
Safe-water signs in Michigan j*942
Sampler for collecting deep water samples. E. S. Hopkins j*870
Water questions of increasing importance e723

WATER COMPACTS, INTERSTATE

Delaware River:
Hughes to report to New York on legal aspects of plan for additional water supply n170
New Jersey postpones action on compact n639
Interstate river compacts. D. E. Carpenter a1011
Water consumption:
Denver, Colo., measurements for a year of water consumption and sewage discharge. S. T. Weller *557

WATER INTAKES

Concrete intake and intake pipe hauled to place and lowered on ice, waterworks, Newton, N. J. H. G. Payrow *184
Fort Laramie Canal, sand-control works, e 920; I. E. Houk *922
Intake well forms sand catcher j*249
Michigan City, Ind., anchor ice closes crib on intake pipe *150
Tunnel, intake, San Diego, built by novel pneumatic caisson method *364

WATER MAINS

Assessments for. (See Municipal improvements.)
Break in force main cuts off part of Detroit water supply n712, 1018
Quickly repaired n794
Breaks in cast-iron mains, Harrisburg and Detroit, cause still unsolved 1018
Cross connections:
Abolition of causes lively discussion at N.E.W.W.A., compromise report 488, e464, n493
Cross-connections health hazard versus fire hazard. C. W. Sherman ... a886
New York State, Public Health Council continues stand against n494
Dead ends. S. B. Morris a965
Eliminating unaccounted-for flow and leakage at Akron. L. H. Newhall .. j*944
Flood, effect on water distribution system, Springfield, Mass. 21
Ice and leakage troubles on water supply pipe lines, Michigan City, Ind. .. *150
Leak surveys in San Francisco. V. E. Perry a964
Locating water-bound leaks by dye-test metering, Chicago. J. B. Eddy j*871
San Francisco, pipe, 58 years in ground, still serviceable *589
Simple method used to lower cast-iron water mains, Springfield, Mass. j*161

WATER METERS

Canada, Regina, Saskatchewan is over 90 per cent metered 937
Chicago, Ill.:
Amendment to metering ordinance approved by Sec'y of War n336
Gives up fight against n791
Philadelphia, mystery bill before city council n710
Research laboratory established by the Pittsburgh Equitable Meter Co. n258
Sealing compound on register box screws, New Jersey 229
Unaccounted-for water. R. L. Howson .. a964

WATER POLLUTION

Bathing enjoined to protect water, Texas 353
Buffalo, phenol tastes being investigated n170
Chicago, Ill.:
Chloro-phenol tastes pervade water supply e98, e99, 115
Phenol in wastes taints water; chief sanitary engineer dismissed n90
Eliminating chloro-phenol tastes from creosoted wood-stave pipe, Colorado. D. E. Kepner a1014
Germany prohibits impure water by law 362
Great Lakes, eight states bordering on adopt resolution against pollution .. n493
Great Lakes states sanitary officials reach agreement on pollution n457
Great Lakes Sanitation Congress discusses problem of n491
Interstate water protection e575
New Brunswick, N. J., picnic ground adjoining reservoir, boating and bathing permitted 235
Ohio Valley, anti-stream pollution work n91

Oil-well pollution necessitates auxiliary water supply. Monroe, La. C. K. Mathews *358
Politics and water service e98
Saner Waltonians e992
Wichita Falls, Tex., pollution diversion. N. T. Veatch, Jr. a1013
(See also Typhoid fever.)

WATER RESOURCES
California, a state water policy. E. Hyatt a1012
Delaware River:
Hughes to report on legal aspects of additional supply for New York ... n170
New Jersey postpones action on compact n639
Herminghaus case. (See Water rights.)
Oregon, potential water-power resources 268
Struggle for water during 1927 ..... e54
Ware River, Mass., Boston receives permit to use water n491
(See also Hydro-electric power; Land reclamation; Rivers; Water compacts; Water rights; Water supply; Waterways.)
Water rights:
California, Mojave Irrigation District, rights granted by Water Commission upheld n210
Herminghaus case:
Suit settled by power company's purchase of the land n168
(See also Water compacts, interstate.)
Water storage:
Cost of storage in steel regulating tanks. A.W.W.A., California section, paper j*524

WATER SUPPLY
Albany, N. Y.:
Alcove dam bids called for n1021
Bond issue authorized by city council n527
Engages engineers to design and construct new Hannacrois-Basic gravity water-supply system n171
Bloomington, Ill., local company to finance new supply 847
Bonds. (See Bonds.)
Boston, Mass.:
Additional supply from Swift and Ware Rivers, progress 85
Metropolitan District Water Supply Commission receives permit from War Dept. to go to Ware River for water n491
Boston Metropolitan District water tunnels. (See Tunnels, Wachusett-Coldbrook.)
Buffalo, phenol tastes being investigated n170
Chicago, Ill.:
Chloro-phenol tastes pervade water, ... e98, e99, 115
Phenol in wastes taints water n90
Cross-connections. (See Water mains.)
Denver, Colo.:
Water Board vacancies filled after two years n170
Detroit, trunk-main water distribution system. L. E. Ayres *855
East Bay District, Calif.:
Mokelumne project:
Lancha Plana dam. (See Dams.)
Status, 1927 81
Free water offered to industries by communities, unsound business e648
Germany, law forbids adulteration or pollution 362
Los Angeles:
Colorado River-Los Angeles aqueduct project. H. A. Van Norman and E. A. Bayley *850
Progress in 1927 81
Engineers and geologist to make survey of the water systems of the city n677
Illinois, tabulation of public supplies for 1921 and 1928 775
Manila, P. I., additional supply for. P. W. Mack *841
Marengo, Ill., surface-well supply with automatic control *854
Monroe, La., oil-well pollution necessitates auxiliary supply. C. K. Mathews *358
New Brunswick, N. J., picnic ground adjoining reservoir 235
New York City:
Additional supply from Delaware River. Hughes to report on legal aspects n170
Extensions 85
Niles and Youngstown, Mich., supply project to cost nine million n91
North Jersey Water Supply District:
G. W. Fuller reports on aeration of water of Wanaque reservoir n678
Aqueduct and aerator fate uncertain n711
Latest action on 757
Pollution. (See Water pollution.)
Portland, Ore., supply and distribution. R. S. Morrow *859
Present-day problems e836
Quincy, Ill., double chlorination of water 407
Red Bank, N. J., staining properties of ground water eliminated by small iron-removal plant. W. Donaldson *112
Omission of general contractor's name 391
St. Louis, additional supply, completion of new plant at Howard Bend. L. A. Day a*1011
San Francisco:
Hetch Hetchy project:
Bonds authorized to finish aqueduct n709
Construction progress on aqueduct: almost completed *614
Status, 1927 81
To buy Spring Valley Water Company n709
To vote on bond issue for purchase of Spring Valley Water Company n417
Shawnee, Okla., filters abandoned for well water. E. T. Archer a1012
Signs placarding pure water:
Illinois uses safety seals j*867
Safe-water signs in Michigan j*942
Springfield, Mass.:
Authorized to build Cobble Mountain reservoir n872
Extension and operation of the water distribution system *1006
Proposed dam opposed by Westfield. n711
Water distribution aided by service facilities *896
Vancouver, B. C., and adjacent municipalities 863
Wichita Falls, Tex., pollution diversion. N. T. Veatch, Jr. a1013
Youngstown and Niles, Mich., plan for joint water supply to cost nine million n91
Water treatment:
Aeration:
Wanaque reservoir, N. J., report of G. W. Fuller n678, n711, 757
Chlorination:
Albany, N. Y.:
Chlorinating apparatus housed in four separate rooms 229
Emergency ventilator in chlorinating room 9
California survey shows growth. C. G. Gillespie 847
Double chlorination at Quincy, Ill. ... 407
Progress. L. H. Enslow a1013
Coagulation:
Sodium aluminate substituted for alum, reduces hardness of water, plant at Hinsdale, Ill. 616
Filtration:
Rapid sand filtration and aeration for iron removal. Red Bank, N. J. W. Donaldson *112
Half-century of advance e957
Hydrogen-ion control:
Reduces cost at small water filter plant, Waterford, N. Y. *240
Iron-removal:
Aeration and rapid sand-filtration to remove staining properties, Red Bank, N. J. W. Donaldson *112
Plant for Albuquerque, N. M. H. N. Veatch, Jr. *845
Protection and purification of supplies a1012
Purification:
Remodeling a small purification plant. J. L. Barron j*867
Softening:
Large plant for boiler feed water (Wm. B. Scaife & Sons) for Carnegie Steel Co. at Duquesne, Pa. .. n761
Sodium aluminate substituted for alum as a coagulant reduces hardness and alkalinity of water at Hinsdale, Ill. 616
Softening plants; A.W.W.A. papers .. a1013

WATER WASTE
Irrigation water, large waste in seepage from main canals and laterals 114
Surveys with improved manograph n715
(See also Water mains, leaks; also water meters.)

WATER WORKS
Albany, N. Y.:
Alcove dam bids called for n1021
Chlorinating apparatus housed in four separate rooms 229
Emergency ventilator in chlorinating room. 9
Engages engineers to design and construct Hannacrois-Basic gravity water-supply system. n171
Albuquerque, N. M., iron-removal plant. N. T. Veatch, Jr. *845
American Water-Works Association. (See American Water-Works Association.)
Belmont, Mass., twenty years a water commissioner. C. W. Sherman *849
Buffalo, N. Y., settlement of controversy over filter defects. n826
Burlingame, Kan., remodeling a small purification plant. J. L. Barron j*867
California chlorination shows growth. C. G. Gillespie 847
Cheyenne, Wyo., spending $675,000 on water-works. 890
Chicago, Ill.:
Experimental filter plant. L. D. Gayton. *861
Chlorinating apparatus. (See Water treatment, chlorination.)
Denver, Water Board vacancies filled after two years. n170
Detroit, Mich., clear water reservoir put into service, Jan. 5. ..... n169
Detroit, trunk-main water distribution system. L. E. Ayres *855
Filtration plants:
Chicago, experimental filter plant. L. D. Gayton *861
Hannibal, Mo., mixing chambers being added. 849
Hydrogen-ion control reduces cost. Waterford, N. Y. *240
Merritton, Ont., single pump to serve in place of three. 105
Operating problems of pneumatic alum conveyor system. J. A. Jensen 931
Peterborough, Ont., six years' operation. R. L. Dobbin a*1014
Starting washed filters. A. V. Graf .. j*867
Trickling filters, new floor system (Metropolitan Paving Brick Co.) n*423
(See also Water treatment.)
Hinsdale, Ill., sodium aluminate for softening water. 616
Hydrants. (See Fire hydrants.)
Iowa, University of, and state Department of Health to hold conference n563
Knoxville, Tenn., fire-hydrant inspection and repairs where needed. F. W. Albert *659, e800
Louisville adds pumps and filters. 858
Management and finance; A.W.W.A. papers a1015
Manila, P. I., additional water supply, gravity aqueduct, filtration plant and storage reservoir. P. W. Mack *841
Manual of A.W.W.A., discussed at meeting of New York section n92
Manual of practice, discussed at meeting of New England Water Works Association. n294
Markers for blind taps used in Knoxville, Tenn. F. W. Albert j*870
Merritton, Ont., single pump to serve in place of three. 105
Milwaukee, Wis., new pumping equipment. H. H. Brown *843
Minneapolis, Fridley filtration plant, has pneumatic alum conveyor. J. A. Jensen 931
Monroe, La., impounding dam, pumps, filters and meters, new. C. K. Mathews *358
New Haven, Conn., contemplates purchase of water-works of New Haven Water Co. e137
Purchase of New Haven Water Company decided against. n830
New Jersey, Paterson, Passaic and Clifton to buy water-works system of Passaic Consolidated Water Company n207
Passaic Consolidated Water Company asks halt to purchase. n905
New Orleans, new pumping and water-treatment works. 858
Newton, N. J., reconstruction in winter. H. G. Payrow *184
Operation:
San Francisco, Spring Valley Water Co., distribution system. G. Pracy .. *839
Springfield, Mass., extension and operation of distribution system. ... *1006
Ownership, changes in. e648
Pumping stations:
Milwaukee, new equipment. H. H. Brown *843
New York City, widening Harlem River increases pumping cost. 284
Scarsdale, N. Y., operating pump controls by main pressure. F. Henshaw j*943
Pumps:
And elevated tanks, changes from reciprocating to centrifugal pumps and some elements in tank design. G. H. Fenkell a806
Selection of pumps to fit service conditions. F. G. Cunningham ... a962
Single pump arranged to serve in place of three, Merritton, Ont. 105
Quincy, Mass., lowering an elevated water tank, E. S. Clark j*869
Red Bank, N. J., small iron-removal plant. W. Donaldson, *112; omission 391
St. Louis:
Extension for new supply from Missouri River, almost completed 83
Large cast-steel valves n876
New plant at Howard Bend a*1011
San Francisco, operation and maintenance of the Spring Valley Water Co. distribution system. G. Pracy *839
Seattle, turbine pumping units for chlorinators. j*868
South Bend, Ind., extension program ... 849
Spring Valley Water Company, operation and maintenance of distribution system. G. Pracy *839
Springfield, Mass.:
Extension and operation of the water distribution system. *1006
Water distribution aided by service facilities. *896
Tanks. (See Tanks.)
Texas water-works short school to meet in Houston. n33
Waterford, N. Y., filter plant, hydrogen-ion control reduces cost. *240
Water Works Manufacturers' Association:
Officers elected. n988

Watersheds:
Reforestation of. E. P. Kable a1012
(See also Drainage.)
Waterways:
Barge line bill aproved n907
Development during 1927. ..... e53
Illinois Construction progress 83
Inland Waterways Corporation report. . 941
St. Lawrence River:
Canada and the U. S. in accord as to basis of treaty. n639
Canadian Parliament, throne speech silent on waterway. n256
International Joint Commission's recommendations, acceptance by Congress urged by Rep. Mapes n35
No official action taken 84

Waterwheels:
Runner designed for 2,200-ft. head. .n*1021
Waterwheels. (See also Turbines.)
Weather forecasts:
Little progress. e575

Weirs:
Niagara Falls, remaking the falls, flow to be altered by submerged weirs. ... e301

WELDING AND CUTTING
American Welding Society. (see American Welding Society.)
Arc welding, new process produces ductile welds (Lincoln Electric Co.) ... n*1024

Arc welding school, Lincoln Electric Co., Cleveland, Ohio. n*532
Bridges:
Chicopee Falls Bridge, learning by errors. e499
Steel plate-girder, Westinghouse Mfg. Co. A. G. Bissell. *322
Buildings welded:
General Electric Co., West Philadelphia, first to be designed and built in compliance with a city building code. .. n494
Large factory of General Electric Co., Philadelphia built by arc welding e763, *766
Shop building, special automatic machine fabricates columns and girders *883
Steel-frame building altered with use of welding, G. Gill *350
Drag-line buckets fabricated by welding (Harnischfeger Corp.) n*608
Gases for, developments in producing .. 431
Joints:
Unit strength, tabulation of test data *237
Portable equipment developed by manufacturers n*832
Prizes awarded n906
Progress e499
Rating test for welders proposed, C. D. Jensen ..... l 369
Structural welding developments in 1927 ..... e57
Welding conferences:
University of Wisconsin, held Feb. 8-10 ..... n256
Well points:
Used in tidal marsh excavation *245
(See also Drainage.)

WELLS

Filters abandoned for well water, Shawnee, Okla., E. T. Archer a1013
Illinois section of A.W.W.A. discusses well water and softening n562
Oil. (See Oil wells under Oil field engineering.)
Surface-well water supply with automatic control, Marengo, Ill. *854
Western Society of Engineers:
Chicago engineers discuss plans for control of Mississippi River floods n417
Opens new quarters in the Engineering Building, Chicago n985
Proposes reciprocal membership n127
To occupy floor of Chicago Engineering Building *270

WHARVES AND DOCKS

Buffington, Ind., high early strength concrete made from ordinary cement for building dock wall, W. Cahill j*412
Ferguson dock patent again upheld n906
Graving dock, Europe's largest, opened at Liverpool 397
Mobile, Ala., state docks, ocean terminal, rapid progress on construction 83
New Orleans, spliced piles for 100-ft. lengths for wharf construction, A. M. Shaw j*246
Poland, Danzig, handling caissons for pier building, M. P. O'Brien j*247
Wind pressure:
Tests made on large model building, results indicate older formulas are too high, E. R. Dawley *508
Wind bracing of tall buildings to be studied n641
(See also Building design, wind-resistant, also Stresses.)
Windows:
Standardization of solid section steel windows, recommendation issued by Bureau of Standards n644
Wire:
Tests of wire and fittings for cable highway guard, C. W. Betz *777
Wisconsin, University of:
Welding conference, annual, held Feb. 8-10 ..... n256
Wisconsin Society of Engineers:
Meeting, Madison, Feb. 16-18 ..... n335

WOOD

Efficiency and economy in utilization e763, n796
Research fellowships in timber, Washington University, Mo. n874
Selling grade-marked and squared lumber in packages (Weyerhaeuser Products Co.) n*680
Stresses:
Compressive stress on wood surfaces inclined to the grain, new formula, W. R. Osgood *243

WOOD PRESERVATION

Creosoted timber:
Engine terminal, raming for buildings, Cincinnati, Ohio *581
Douglas fir poles, maximum load for treated poles measured in test series, *108; see also ..... l 369
Poles, some difficulties in testing, T. R. C. Wilson ..... l 369
Railroad ties:
Economics of treated ties on the Lackawanna Railroad 310
Treated timber for railway use, discussed at A.W.P.A. meeting n255
Railway timber, economy in framing timber and ties before treatment a327
Teredo navalis, protecting timber against, R. A. Marr and R. A. Marr, Jr. *368
Termite damage to buildings, how to prevent, e761; T. E. Snyder *274
Wood Utilization Committee:
Annual meeting, Washington, D. C., May 4-5 ..... n675
World Congress of Engineers:
To be held in Tokio, Nov., 1929; American committee announced n419
Organized n528
Wrought Iron Research Association:
Formed April, headquarters in Pittsburgh n714
Wyes:
Penstock, withstand pressure of 2,230 lb. per square inch j*246

Y

Yugoslavia:
Highways. (See Highways.)

AUTHORS' INDEX

Aagaard, V. A.: Crazing and the growth of hair cracks in concrete a481
Albert, F. W.: Experiences with blind-taps and a new marker *871
Fire hydrant inspection by the Knoxville water-works 659
Allen, C. K.: Pneumatic caissons sealed at record depths *484
Andrew, H.: Device detects high and low spots in concrete road surfaces. j*161
Archer, E. T.: Filters abandoned for well water a1012
Ash, H. W.: Progress on central highway of Cuba during 1927 ..... *22
Austin, F. H.: Method for computing pavement assessments 897
Austin, W. F.: Contractors adopting accident prevention practices a197
Ayres, L. E.: Trunk-main water distribution system for Detroit *855
Ayres, Q. C.: Against mole ditching for drainage ..... l 251
Future land reclamation ..... l 904
Paying for flood control. ..... l 166

Bacon, R. H.: Los Angeles will soon have 44 pedestrian subways *785
Baker, I. M.: Sewers built simultaneously to opposite grades *507
Balliet, L.: St. Francis dam failure due to lack of geological study ..... l 638
Barron, J. L.: Remodeling a small water-purification plant 867
Bartlett, H. C.: Riveted brackets ..... l 946
Bates, P. H.: Crazing of cement mortars. . a482
Modern cements 887, 932
Bayley, E. A.: Colorado River-Los Angeles aqueduct project *850
Beightler, R. S.: Consistency of silicate of soda for curing concrete. *316
Bell, N. J.: Stress analysis of 90-year-old wooden bridge *234
Bellinger, L. F.: Early ships of the Navy. . l 526
Bennett, C. S.: Maintenance of flood-control works of Miami District *186
Bennett, R.: St. Francis dam failure *517
Berkenblit, S. E.: Steel viaduct masked as arch structure *620
Berman, M.: Mechanical analysis of structures ..... l 206
Betz, C. W.: Tests of wire and fittings for cable highway guard *777
Bevier, P. H.: Some practices in erecting damp-proof tile-and-brick walls *285
Bissell, A. G.: Plate-girder railway bridge built by welding *323
Bonner, F. E.: New flood records for California streams *776
Bowers, N. A.: St. Francis dam catastrophe *466
St. Francis dam catastrophe, a review six weeks after *727
Braach, H.: Some recent points in engineering law 595, 817
Brown, H. H.: New pumping equipment for Milwaukee water-works *843
Brown, R. W.: Buckling of columns at protuberances ..... l 251
Brownridge, F. C.: Widening heavy traffic street at Pontiac, Mich. *355
Brush, W. W.: Cast-iron pipe and a new pipe bank a964
Buck, C. H.: Broom for roughening concrete road surfaces in Delaware. j*30
Burgess, A. S.: Spillway capacity that should be provided for dams ..... l 1018
Burton, V. R.: Roadbuilders require new soil studies *624
Some economic considerations in using snow fence a120
Cahill, W.: Early-strength concrete made with ordinary cement j*412
Calvert, C. K.: Deep-pit sludge digestion at Indianapolis sewage-works *230
Casler, M. D.: Temporary flood storage calculated by analytical method ..... l 789
Capen, C. H., Jr.: Sewage settling tank design ..... l 292
Carpenter, D. E.: Interstate water compacts 1011
Carswell, C.: Memorial tower built to last through ages *543
Chambers, R. H.: Rules for foundations on yielding soils 520
Waterfront foundation complicated by buried log cribs. *280
Chapman, H. P.: Patching bituminous macadam with asphaltic concrete in Ohio j*28
Christensen, A. O. L.: Crazing and the growth of hair cracks in concrete a481
Chubb, J. H.: Control and special mixtures for road concrete *19
Clark, E. S.: Lowering an elevated water tank 869
Clementsen, H. A.: Storing snow fence at points used, in Michigan j30
Cline, I. M.: Forecasting Mississippi flood stages *277
Coffin, T. DeL.: Mark Twain on regulating the Mississippi ..... l 370
Cohn, M. M.: "Know your Imhoff tanks" .. *588
Coleman, J. F.: Correction of misquotation on Mississippi flood problem ..... l 165
Covell, C. E.: Grinding factory floors reduces dusting a482
Crandell, J. S.: Tin for pouring tar into molds j*524
Cranford, F. L.: Surety bonding situation. . a198
Creighton, W. F.: Financial worth best criterion of contractor's responsibility a119
Critchlow, H. T.: Failure of non-state-inspected dam under construction 116
Cunningham, F. G.: Selection of pumps to fit service conditions a962
Davidson, W. C.: Training school and tandem patrol are maintenance innovations in New Mexico j*29
Davis, R. E.: Concrete flow under sustained compressive stress a481
Dawley, E. R.: Wind-pressure tests *508
Day, L. A.: More water for St. Louis. . a*1011
DeBerard, W. W.: Mississippi River flood control a brief summary of events and conditions *63
Today in the Mississippi flood area. *311, *398, *435, *512
Deck, F. W.: Unusual towers on Conowingo transmission line *686
Dewell, H. D.: Earthquake resistant construction 650, 699
Dickey, W. G.: Blade grader finishes asphalt road surface *591
Dixon, G. G.: Studies on prevention of scour below overfall dams *696
Dobbin, R. L.: Filter plant operation, Peterborough, Ont. a*1014
Donaldson, W.: Small iron-removal plant for Red Bank water-works *112
Donohue, J.: Asphalt floor laid and rolled like street paving *8
Duncan, F. K.: Refuse disposal plants at Baltimore *152
Eckel, E. C.: Portland and accelerated portland cement composition *617
Eddy, H. P.: Civic duty for municipal engineers to preserve historical data ..... l 638
Eddy, J. B.: Locating water-bound leaks by dye-test metering *871
Eiffert, C. H.: Administering farm lands in flood-retarding basins *739
Elam, W. E.: Flood control through slope correction *996
Profile sheets handled on reversible roller cabinet j*753
Ellis, H. K.: How construction contracts were drawn 200 years ago 233
Emory, L. T.: Foreshore protection along Chesapeake Bay *655
Enslow, L. H.: Progress in water chlorination a1013
Evans, A.: Making pneumatic arch closures in tunnel work j*164
Fegles, D. B.: Cost accounting and depreciation a197
Feld, J. Literature on groundwater-lowering methods ..... l 981
Fenkell, G. H.: Pumps and elevated tanks for water-works systems 806
Finch, L. S.: Weaknesses in public sanitation in Indiana 549
Fisk, G. P.: Pavement upkeep for 49 years in Buffalo, N. Y. 14
Fitzgerald, C. C.: Precast concrete in Havana sea wall *802
Flaa, I. E.: Making joint in water tank where steel shell joins concrete base ..*394
Fleming R.: Early parabolic truss bridges*748
Foote, H. B.: Sewage agitation and chloronation tests 1001
Forbes, H.: Geological formation at the St. Francis dam site *596
Francis, E. D.: Tensile working stresses for rivets ..... l 903
Freeman, P. J.: Grout outlasts sand as filler for brick pavement *805
Friedman, H. J.: Advanced roadbuilding on Georgia's coastal road *958
Gardner, L.: Advance made in mixer standardization a197
Gayton, L. D.: Experimental water-filtration plant for Chicago *861
Gerry, M. H., Jr.: Deficiencies in dam design as illustrated by St. Francis dam failure ..... l 983
Gibbs, S. W.: Construction methods on the Oakland estuary tube *100
Giles, R. T.: Require separate sizes of stone for road concrete a120
Gill, G.: Alteration of a steel-frame building with use of welding *350
Repairing construction defects in a concrete building *742
Gillespie, C. G.: California water-chlorination shows growth 847
Godfrey, E.: Tension on rivets ..... l 416
Graf, A. V.: Starting washed filters. 867

*Illustrated; a, abstracts; e, editorials; j, job and office; l, letter; n, news